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SPACE SHUTTLE ORBITER TRIMMED CENTER OF GRAVITY EXTENSION STUDY

VOLUME I - EFFECTS OF CONFIGURATION MODIFICATIONS ON THE AERODYNAMIC CHARACTERISTICS OF THE 140 A/B ORBITER AT MACH 10.3

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June 1975

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16. Abstract

Longitudinal and lateral-directional characteristics were obtained on several modified versions of the Rockwell International 140 A/B orbiter (0.010 scale). These modifications, designed to extend trim capability to center-of-gravity locations forward of the 65 percent fuselage station, consisted of two forebodies, two canard trimmers, and two body-wing fillets. Tests were performed over an angle-of-attack range of 12 to 36 degrees at a Reynolds number of 1.03 million based on body reference length. Data were obtained with the elevons and body flap deflected at the full-up and full-down design values. This investigation, designated as LA-47, was conducted in the NASA Langley Continuous Flow Hypersonic Tunnel (Test No. 104) in June 1974.

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SPACE SHUTTLE ORBITER TRIMMED CENTER OF GRAVITY EXTENSION STUDY: VOLUME I - EFFECTS OF CONFIGURATION MODIFICATIONS ON THE AERODYNAMIC CHARACTERISTICS OF THE 140 A/B ORBITER AT MACH 10.3

(LA-47)

BY

Peter T. Bernot

SUMMARY

Longitudinal and lateral-directional characteristics at Mach 10.3 have been obtained on a 0.010-scale model of the Rockwell International 140 A/B orbiter having several modifications. These modifications, designed to extend trim capability at center-of-gravity locations forward of the 65 percent fuselage station, consisted of two forebodies, two canard trimmers, and two body-wing fillets. Data were obtained over an angle-of-attack range of 12^{o} to 36^{o} at a Reynolds number of 1.03×10^{6} based on body reference length. Elevon/body flap deflections were $-40^{o}/-11.7^{o}$ and $10^{o}/16.3^{o}$ for the configurations tested; speed brake deflection angle was a constant 55^{o}. This investigation was conducted in the NASA/Langley Continuous Flow Hypersonic Tunnel.

INTRODUCTION

The current design values of the center-of-gravity (c.g.) locations forthe shuttle orbiter range from 65 percent to 67.5 percent of the body length. Payload planners have indicated the desirability of extending this c.g. range approximately 5 percent in the forward direction to accommodate future payload requirements. At the request of the Johnson Space Center, a study has been undertaken at Langley Research Center to investigate the effects of several modifications designed to extend trim capability to more forward c.g. locations. In order to have a minimal impact on the shuttle program, these modifications were designed to be adaptable to the present orbiter without seriously altering the subsystems now fixed.

This paper presents the static stability and control results for several modified versions of the Rockwell International 140 A/B orbiter (0.010 scale) at a Mach number of 10.3 and a Reynolds number, based on body length, of 1.03×10^6. These modifications consisted of two forebodies incorporating nose cant (nose bent upward), two canard-type trimmers of varying size, and two wing-body fillets having larger planform areas than the currently-designed fillet. Force and moment data were obtained over an angle-of-attack range of 12° to 36° at sideslip angles of 0° and -5°. The modified versions were tested with elevon/body flap deflections of $-40^\circ/-11.7^\circ$ and $10^\circ/16.3^\circ$ which represented operational control limits associated with the forward and aft c.g. locations, respectively. A speed brake deflection of 55° was used for all tests. This investigation was conducted in the Langley Continuous Flow Hypersonic Tunnel.

SYMBOLS

SYMBOL	DATAMAN SYMBOL	DEFINITION
b	BREF	wing span
$\bar{c}$	LREF	wing mean aerodynamic chord
C_A	CA	axial-force coefficient, $\frac{\text{Axial force}}{qS}$
C_D	CD	drag coefficient, $\frac{\text{Drag}}{qS}$
C_L	CL	lift coefficient, $\frac{\text{Lift}}{qS}$
C_ℓ	CBL	rolling-moment coefficient, $\frac{\text{Rolling moment}}{qSb}$
C_{ℓ_β}	DCBLDB	rolling-moment coefficient derivative, with respect to beta, per degree
C_m	CLM	pitching-moment coefficient, $\frac{\text{Pitching moment}}{qS\,\bar{c}}$
C_N	CN	normal-force coefficient, $\frac{\text{Normal force}}{qS}$
C_n	CYN	yawing-moment coefficient, $\frac{\text{Yawing moment}}{qSb}$
C_{n_β}	DCYNDB	yawing-moment coefficient derivative, with respect to beta, per degree
C_Y	CY	side-force coefficient, $\frac{\text{Side force}}{qS}$
C_{Y_β}	DCY/DB	side-force coefficient derivative, with respect to beta, per degree
FRL	FRL	fuselage reference line
ℓ		fuselage reference length
L/D	L/D	lift-drag ratio, C_L/C_D
M	MACH	Mach number
MRP	MRP	moment reference point
q	Q(NSM)	dynamic pressure, $\frac{1}{2}\rho V^2$

SYMBOL	DATAMAN SYMBOL	DEFINITION
R	RN	Reynolds number based on body length
S	SREF	total wing planform area
V		velocity
X,Y,Z	XO,YO,ZO	orbiter station numbers
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
δ_{BF}	BDFLAP	body flap deflection angle, positive with trailing edge down, degrees
δ_e	ELEVTR	elevon deflection angle, positive with trailing edge down, degrees
δ_{SB}	SPDBRK	split rudder flare angle, positive with trailing edges outward, degrees
ρ		mass density of air

TEST FACILITY

The Mach 10 nozzle of the Langley Continuous-Flow Hypersonic Tunnel is designed to operate at stagnation pressures of 15 to 150 atmospheres at temperatures up to 1089 K (1960 R). Air is preheated electrically by passing it through a multi-tube heater. The nozzle has a 0.78 m (31 in.) square test section and incorporates a moveable second minimum. Continuous operation is achieved by passing the air through a series of compressors. Additional information on this facility is given in reference 1.

MODELS

The baseline test model, a 0.010-scale version of the RI-140 A/B orbiter, was fabricated from aluminum at the Langley Research Center. (See fig. 1(a).) Component designations of the baseline model are:

B26 - fuselage

C9 - canopy

M7 - OMS pods

F10 - body flap

W116 - wing

SO - wing-body fillet

E26 - elevon

V8 - vertical tail

R5 - rudder

Each component is described in the dimensional data sheets in table I.

Modifications to the baseline model consisted of two forebodies, two wing-body fillets, and two canard-type trimmers. The modified forebodies, B2 and B4 in figures 1(b) and 1(c), had increased nose cant (nose bent up). The B2 forebody had the same planform as the baseline, but the B4 forebody was longer and wider. The modified wing-body fillets, S1 and S2, had larger planform areas than the baseline fillet, SO. Details of the modified fillets are presented in figure 1(d). The canard trimmers, C3 and C4 (fig. 1(e)), had planform areas (per panel) of 6.04 m^2 (65.0 ft^2) and 9.84 m^2 (105.9 ft^2), respectively, with a leading edge sweep angle of 55^o.

CONFIGURATIONS TESTED

A total of ten configurations were tested which included a baseline model of the 140 A/B orbiter. Six modified configurations were tested to determine the individual effects of forebodies B2 and B4; fillets S1 and S2; and canards C3 and C4. Of the remaining three configurations, one incorporated the B2 forebody with the S2 fillet; another combined the B2 forebody with the C3 canard; and the final configuration represented the orbiter model with the baseline fillet, S0, removed. Photographs of several test configurations are presented in figure 2.

All configurations were tested with elevon/body flap deflections of $10^{o}/16.3^{o}$ and $-40^{o}/-11.7^{o}$ with the exception of the final configuration which was tested only with positive deflection angles. Additional tests at other elevon/body flap deflection angles were made on several selected configurations as indicated in table II.

TESTS

Tests were conducted at a stagnation pressure of 5.17 MPa (750 psia) and an average stagnation temperature of 1006 K (1810 R). The free-stream Mach number was 10.33 at a Reynolds number of 1.03×10^{6} based on fuselage length. The angle-of-attack range was 12^{o} to 36^{o} at sideslip angles of 0^{o} and -5^{o}. Model forces and moments were measured by a six-component, water-cooled, strain-gage balance (LaRC 2019-A) which was mounted on a 20^{o} bent sting. During the test program, the balance failed and was replaced by a similar balance (LaRC 2019-C). All tests were made with a speed brake deflection of 55^{o}. Model base pressures were not measured. The complete

test program is presented in table II. This investigation was initiated in June 1974 and had a tunnel occupancy time of 32 hours.

DATA REDUCTION

Aerodynamic coefficients based on body and stability axes systems (fig. 3) were calculated using the following reference values:

S = total wing planform area = .025 m^2 (.2690 ft^2)

$\bar{c}$ = wing mean aerodynamic chord = .121 m (4.748 in)

b = wing span = .238 m (9.367 in)

All moment coefficients were referenced about the center-of-gravity located at 65 percent of reference body length which corresponds to a point 0.213 m (8.417 in) aft of the nose and .032 m (1.26 in) below the fuselage top surface.

Estimated inaccuracies in the body-axis coefficients are based on $\pm$ 0.5 percent of the design loads for the 2019 balances. These inaccuracies expressed in coefficient form for the test free-stream dynamic pressure of 6890 N/m^2 (1.0 psia) are:

$C_N \pm .0090$

$C_A \pm .0019$

$C_m \pm .0019$

$C_l \pm .0002$

$C_n \pm .0004$

$C_Y \pm .0032$

PRESENTATION OF RESULTS

The longitudinal characteristics of the modified configurations at elevon/body-flap deflections of $10^{o}/16.3^{o}$ and $-40^{o}/-11.7^{o}$ are presented in figures 4 through 9. Data on the baseline 140 A/B orbiter model are also included for comparative purposes. Test results obtained at intermediate control deflections are also presented for the baseline orbiter (fig. 10) and two modified configurations, one having the C3 canard trimmer (fig. 11) and the other having the S2 fillet (fig. 12).

The lateral-directional characteristics for the various modified configurations are presented in figures 13 through 18 and include data for the baseline orbiter model. Tabulations of the measured coefficients are presented in the Appendix.

DISCUSSION OF RESULTS

The effects of the various modifications on the trim capability for extended c.g. locations were determined for an operational angle of attack of 30^{o}. For the forward c.g. trim condition ($\delta_e/\delta_{BF} = -40^{o}/-11.7^{o}$), a ΔC_m margin of -0.02 was used to account for any anomalies that might occur with the controls set at their maximum values. For the aft c.g. trim condition ($\delta_e/\delta_{BF} = 10^{o}/16.3^{o}$), a ΔC_m margin was not required since the controls are not set at the maximum values.

Tabulations of the maximum trimmable c.g. locations resulting from the modifications tested in this investigation are presented below.

Configuration Modifications	Center of Gravity, % ℓ	
	Forward (ΔC_m = -.02)	Aft (ΔC_m = 0)
None (Baseline)	63.9	68.0
B2	63.5	67.7
B4	62.9	67.1
C3	61.9	66.0
C4	61.1	65.4
S1	62.8	66.9
S2	61.6	65.8
B2 C3	61.6	65.8
B2 S2	61.4	65.6
SO removed	-	69.7

These results indicate that all modifications shifted the trim c.g. locations forward with the exception of the configuration which had the fillet removed, as expected. The canard trimmer C4 provided the largest c.g. shift (2.8 percent of body length) while the fillet S2 yielded a 2.3 percent extension. The oversized forebody B4 resulted in a shift of only 1.0 percent. The forebody B2 which was incorporated on three configurations, produced the smallest average c.g. shift of 0.4 percent. This small effect was due to the relative ineffectiveness of the canted forebody at the higher angles of attack. (See fig. 5 on page 41.) The results also indicate that positive static stability existed at both the forward and aft c.g. locations for all configurations tested. These results were determined by rotating the axis on the C_m vs C_N plots for each test configuration.

In general, the modified configurations had only small effects on the lateral-directional characteristics for a constant c.g. location of 65

percent of body length. The modified forebody, B4, did exhibit some improvement in directional stability (DCYNDB) as shown in figure 13 on page 97.

REFERENCES

1. Schaefer, William T., Jr.: Characteristics of Major Active Wind Tunnels at the Langley Research Center. NASA TM X-1130, 1965.

TABLE I.-COMPONENT DIMENSIONAL DATA

COMPONENT- BODY- B26
GENERAL DESCRIPTION- CONFIGURATION 140A/B ORBITER FUSELAGE. B26 IS IDENTICAL TO B24 EXCEPT THE UNDER SIDE OF THE FUSELAGE HAS BEEN REFAIRED TO ACCEPT W116.
MODEL SCALE- 0.010
DRAWING NUMBERS- SS-A00147 RELEASE 12. VL7-000143B. VL7-000200. VL7-000205. VL7-006089. VL7-000145. VL70-000140A. VL70-000140B.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
LENGTH OML FWD STA XO=235	3284.99	CM.	1293.30	IN.	32.850	CM.	12.933	IN.
* LENGTH IML FWD STA XO=238	3277.37	CM.	1290.30	IN.	32.774	CM.	12.903	IN.
MAX WIDTH XO=1528.3	670.56	CM.	264.00	IN.	6.706	CM.	2.640	IN.
MAX DEPTH XO=1464	635.00	CM.	250.00	IN.	6.350	CM.	2.500	IN.
FINENESS RATIO	4.899		4.899		4.899		4.899	
MAX CROSS-SECTIONAL AREA	31.6689	SQ.M.	340.8800	SQ.FT.	31.6689	SQ.CM.	4.9087	SQ.IN.

*Vehicle reference length (ℓ) is measured from the inner mold line value of XO = 238 which is 7.62 cm (full scale) behind the vehicle nose.

COMPONENT- CANOPY- C9
GENERAL DESCRIPTION- CONFIGURATION 3A. CANOPY USED WITH FUSELAGE B26.
MODEL SCALE- 0.010
DRAWING NUMBERS- SS-A00147 RELEASE 12. VL70-000143A.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
LENGTH XO=434.643 TO 578	364.127	CM.	143.357	IN.	3.641	CM.	1.434	IN.
MAX WIDTH XO= 513.127	387.127	CM.	152.412	IN.	3.871	CM.	1.524	IN.
MAX DEPTH XO= 485.0	63.500	CM.	25.000	IN.	.635	CM.	.250	IN.

TABLE I.- Continued

COMPONENT- BODY FLAP- F10
GENERAL DESCRIPTION- CONFIGURATION 140C BODY FLAP, HINGELINE LOCATED AT XO= 1532, ZO= 287.
MODEL SCALE- 0.010
DRAWING NUMBERS- VL70-000140C, VL70-355114.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
LENGTH XO= 1525.5 TO 1613	222.250	CM.	87.500	IN.	2.223	CM.	.875	IN.
MAX WIDTH AT L.E. XO=1525.5	650.241	CM.	256.000	IN.	6.502	CM.	2.560	IN.
MAX DEPTH XO= 1532	50.287	CM.	19.798	IN.	.503	CM.	.198	IN.
AREAS								
MAX CROSS-SECT AT HINGELINE	3.2690	SQ.M.	35.1960	SQ.FT.	3.2690	SQ.CM.	.5068	SQ.IN.
PLANFORM	12.5420	SQ.M.	135.0000	SQ.FT.	12.5420	SQ.CM.	1.9440	SQ.IN.
BASE AT XO= 1613	.4543	SQ.M.	4.8900	SQ.FT.	.4543	SQ.CM.	.0704	SQ.IN.

COMPONENT- OMS/RCS PODS- M7
GENERAL DESCRIPTION- CONFIGURATION 140A/B ORBITER OMS/RCS PODS.
MODEL SCALE- 0.010
DRAWING NUMBERS- SS-A00147 RELEASE 12, VL70-000145.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
LENGTH OMS FWD STA XO=1233.0	830.582	CM.	327.000	IN.	8.306	CM.	3.270	IN.
MAX WIDTH XO= 1450.0	240.030	CM.	94.500	IN.	2.400	CM.	.945	IN.
MAX DEPTH XO= 1493.0	276.861	CM.	109.000	IN.	2.769	CM.	1.090	IN.

TABLE I.- Continued

COMPONENT- WING- W116, MODEL SCALE- 0.010
GENERAL DESCRIPTION- CONFIGURATION 4, IDENTICAL TO W114 EXCEPT AIRFOIL THICKNESS
DIHEDRAL ANGLE IS ALONG TRAILING EDGE OF WING.
TEST IDENTIFICATION- LA47, DRAWING NUMBERS- VL70-000140A, VL70-00020.

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
TOTAL DATA								
THEORETICAL PLANFORM AREA	249.9102	SQ.M.	2690.0000	SQ.FT.	249.9102	SQ.CM.	38.7360	SQ.IN.
THEORETICAL SPAN	2379.172	CM.	936.680	IN.	23.792	CM.	9.367	IN.
ASPECT RATIO	2.265		2.265		2.265		2.265	
RATE OF TAPER	1.177		1.177		1.177		1.177	
TAPER RATIO	.200		.200		.200		.200	
DIHEDRAL ANGLE	3.500	DEG.	3.500	DEG.	3.500	DEG.	3.500	DEG.
INCIDENCE ANGLE	.500	DEG.	.500	DEG.	.500	DEG.	.500	DEG.
AERODYNAMIC TWIST	3.000	DEG.	3.000	DEG.	3.000	DEG.	3.000	DEG.
SWEEP-BACK ANGLES								
LEADING EDGE	45.000	DEG.	45.000	DEG.	45.000	DEG.	45.000	DEG.
TRAILING EDGE	-10.056	DEG.	-10.056	DEG.	-10.056	DEG.	-10.056	DEG.
0.25 ELEMENT LINE	35.209	DEG.	35.209	DEG.	35.209	DEG.	35.209	DEG.
CHORDS								
THEORETICAL ROOT	1750.67	CM.	689.24	IN.	17.51	CM.	6.89	IN.
THEORETICAL TIP	350.14	CM.	137.85	IN.	3.50	CM.	1.38	IN.
MAC	1206.02	CM.	474.81	IN.	12.06	CM.	4.75	IN.
FUS STA OF 0.25 MAC	2887.55	CM.	1136.83	IN.	28.88	CM.	11.37	IN.
W.P. OF 0.25 MAC	738.07	CM.	290.58	IN.	7.38	CM.	2.91	IN.
B.L. OF 0.25 MAC	462.61	CM.	182.13	IN.	4.63	CM.	1.82	IN.
EXPOSED DATA								
THEORETICAL AREA	162.7203	SQ.M.	1751.5000	SQ.FT.	162.7203	SQ.CM.	25.2216	SQ.IN.
THEORETICAL SPAN BP=108	1830.53	CM.	720.68	IN.	18.31	CM.	7.21	IN.
ASPECT RATIO	2.059		2.059		2.059		2.059	
TAPER RATIO	.2450		.2450		.2450		.2450	
CHORDS								
ROOT BP= 108	1427.71	CM.	562.09	IN.	14.28	CM.	5.62	IN.
TIP 1.00 B/2	350.14	CM.	137.85	IN.	3.50	CM.	1.38	IN.
MAC	997.79	CM.	392.83	IN.	9.98	CM.	3.93	IN.
FUS STA OF 0.25 MAC	3012.40	CM.	1185.98	IN.	30.12	CM.	11.86	IN.
W.P. OF 0.25 MAC	747.52	CM.	294.30	IN.	7.48	CM.	2.94	IN.
B.L. OF 0.25 MAC	639.50	CM.	251.77	IN.	6.39	CM.	2.52	IN.
AIRFOIL SECTION								
ROOT B/2 = 0.425	.113		.113		.113		.113	
TIP B/2 = 1.0	.120		.120		.120		.120	
LEADING EDGE CUFF (2)								
PLANFORM AREA	10.5148	SQ.M.	113.1800	SQ.FT.	10.5148	SQ.CM.	1.6298	SQ.IN.
INTERSECTS FUS ML 0 STA	1270.00	CM.	500.00	IN.	12.70	CM.	5.00	IN.
INTERSECTS WING AT STA	2600.97	CM.	1024.00	IN.	26.01	CM.	10.24	IN.

TABLE I.- Continued

COMPONENT- ELEVON- E26
GENERAL DESCRIPTION- CONFIGURATION 140A/B ORBITER ELEVONS. DATA IS FOR ONE SIDE.
MODEL SCALE- 0.010
DRAWING NUMBERS- VL70-000200, VL70-006089, VL70-006092.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC	FULL SCALE ENGLISH	MODEL SCALE METRIC	MODEL SCALE ENGLISH
AREA	19.5097 SQ.M.	210.0000 SQ.FT.	19.5097 SQ.CM.	3.0240 SQ.IN.
EQUIVALENT SPAN	886.97 CM.	349.20 IN.	8.87 CM.	3.49 IN.
INBOARD EQUIVALENT CHORD	299.72 CM.	118.00 IN.	3.00 CM.	1.18 IN.
OUTBOARD EQUIVALENT CHORD	140.188 CM.	55.192 IN.	1.402 CM.	.552 IN.
RATIO MOVABLE SURFACE CHORD/ TOTAL SURFACE CHORD				
AT INBOARD EQUIVALENT CHORD	.2096	.2096	.2096	.2096
AT OUTBOARD EQUIVALENT CHORD	.4004	.4004	.4004	.4004
SWEEP-BACK ANGLES				
LEADING EDGE	.000 DEG.	.000 DEG.	.000 DEG.	.000 DEG.
TAILING EDGE	-10.056 DEG.	-10.056 DEG.	-10.056 DEG.	-10.056 DEG.
HINGELINE	.000 DEG.	.000 DEG.	.000 DEG.	.000 DEG.
AREA MOMENT				
PRODUCT OF AREA AND MAC	44.9462 CU.M.	1587.2500 CU.FT.	44.9462 CU.CM.	2.7428 CU.IN.
MEAN AERODYNAMIC CHORD	230.38 CM.	90.70 IN.	2.30 CM.	.91 IN.

TABLE I.- Continued

COMPONENT- VERTICAL TAIL- V8
GENERAL DESCRIPTION- CONFIGURATION 140C ORBITER VERTICAL TAIL, IDENTICAL TO CONFIGURATION 140A/B VERTICAL TAIL.
MODEL SCALE- 0.010
DRAWING NUMBERS- VL70-000140C, VL70-000146B.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
THEORETICAL AREA	38.3926	SQ.M.	413.2530	SQ.FT.	38.3926	SQ.CM.	5.9508	SQ.IN.
THEORETICAL SPAN	801.93	CM.	315.72	IN.	8.02	CM.	3.16	IN.
ASPECT RATIO	1.675		1.675		1.675		1.675	
RATE OF TAPER	.507		.507		.507		.507	
TAPER RATIO	.404		.404		.404		.404	
SWEEP-BACK ANGLES								
LEADING EDGE	45.00	DEG.	45.00	DEG.	45.00	DEG.	45.00	DEG.
TRAILING EDGE	26.25	DEG.	26.25	DEG.	26.25	DEG.	26.25	DEG.
0.25 ELEMENT LINE	41.13	DEG.	41.13	DEG.	41.13	DEG.	41.13	DEG.
CHORDS								
THEORETICAL ROOT	681.99	CM.	268.50	IN.	6.82	CM.	2.69	IN.
THEORETICAL TIP	275.51	CM.	108.47	IN.	2.76	CM.	1.08	IN.
MAC	507.52	CM.	199.81	IN.	5.08	CM.	2.00	IN.
FUS STA OF 0.25 MAC	3716.92	CM.	1463.35	IN.	37.17	CM.	14.63	IN.
W.B. OF 0.25 MAC	1614.22	CM.	635.52	IN.	16.14	CM.	6.36	IN.
B.L. OF 0.25 MAC	.00	CM.	.00	IN.	.00	CM.	.00	IN.
AIRFOIL SECTION								
LEADING WEDGE ANGLE	10.00	DEG.	10.00	DEG.	10.00	DEG.	10.00	DEG.
TRAILING WEDGE ANGLE	14.92	DEG.	14.92	DEG.	14.92	DEG.	14.92	DEG.
LEADING EDGE RADIUS	5.08	CM.	2.00	IN.	.05	CM.	.02	IN.
VOID AREA	1.2235	SQ.M.	13.1700	SQ.FT.	1.2235	SQ.CM.	.1896	SQ.IN.
BLANKETED AREA	.0000	SQ.M.	.0000	SQ.FT.	.0000	SQ.CM.	.0000	SQ.IN.

TABLE I.- Concluded

COMPONENT- RUDDER- R5
GENERAL DESCRIPTION- CONFIGURATION 140C ORBITER RUDDER. IDENTICAL TO THE CONFIGURATION 140A/B RUDDER.
MODEL SCALE- 0.010
DRAWING NUMBERS- VL70-000146B. VL70-000095.
TEST IDENTIFICATION- LA47

	FULL SCALE METRIC		FULL SCALE ENGLISH		MODEL SCALE METRIC		MODEL SCALE ENGLISH	
AREA	9.304	SQ.M.	100.150	SQ.FT.	.0009	SQ.M.	.0100	SQ.FT.
EQUIVALENT SPAN	510.54	CM.	201.00	IN.	5.11	CM.	2.01	IN.
INBOARD EQUIVALENT CHORD	232.626	CM.	91.585	IN.	2.326	CM.	.916	IN.
OUTBOARD EQUIVALENT CHORD	129.116	CM.	50.833	IN.	1.291	CM.	.508	IN.
RATIO MOVABLE SURFACE CHORD/ TOTAL SURFACE CHORD								
AT INBOARD EQUIVALENT CHORD	.400		.400		.400		.400	
AT OUTBOARD EQUIVALENT CHORD	.400		.400		.400		.400	
SWEEP-BACK ANGLES								
TAILING EDGE	26.25	DEG.	26.25	DEG.	26.25	DEG.	26.25	DEG.
HINGELINE	34.83	DEG.	34.83	DEG.	34.83	DEG.	34.83	DEG.
AREA MOMENT								
PRODUCT OF AREA AND MAC	17.2994	CU.M.	610.9200	CU.FT.	17.2994	CU.CM.	1.0557	CU.IN.
MEAN AERODYNAMIC CHORD	185.93	CM.	73.20	IN.	1.86	CM.	.73	IN.

TABLE II

TEST: CFHT 104 (LA-47) — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: 11/74

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	PARAMETERS/VALUES δSB	PARAMETERS/VALUES δBF	NO. OF RUNS	MACH NUMBERS 10.3	TEST RUN NUMBER
RHH001	BASELINE 140A/B	A	0	0	55	0		33	
02			0	0		-11.7		34	
03			0	0		16.3		35	
04			0	10		16.3		36	
05			-5	10		16.3		37	
06			0	-20		-11.7		40	
07			0	-40		-11.7		38	
08			-5	-40		-11.7		39	
09	140A/B -S0		0	10		16.3		81	
10			0	10		16.3		82	
11	140A/B +S2		0	0		-11.7		76	
12			0	10		16.3		41	
13			-5	10		16.3		42	
14			0	-20		-11.7		75	
15			0	-40		-11.7		43	
16			-5	-40		-11.7		44	
17	140A/B +S1		0	10		16.3		79	
18			-5	10		16.3		80	

α OR β SCHEDULES: A) 12°,16°,20°,24°,28°,32°,36°

TABLE II.- Continued

TEST: CFHT 104 (LA-47) | DATA SET RUN NUMBER COLLATION SUMMARY | DATE: 11/74

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	PARAMETERS/VALUES δSB	PARAMETERS/VALUES δBF	NO. OF RUNS	MACH NUMBERS 10.3	TEST RUN NUMBERS
RHH019	140A/B + S1	A	0	-40	55	-11.7		77	
20	↓		-5	-40		-11.7		78	
21	140A/B + C3		0	0		-11.7		73	
22			0	10		16.3		47	
23			-5	10		16.3		48	
24			0	-40		-11.7		45	
25	↓		-5	-40		-11.7		46	
26	140A/B + C4		0	10		16.3		67	
27			-5	10		16.3		68	
28			0	-40		-11.7		69	
29	↓		-5	-40		-11.7		70	
30	B2 replaces B26		0	10		16.3		49	
31			-5	10		16.3		50	
32			0	-40		-11.7		55	
33	↓		-5	-40		-11.7		56	
34	B2 S2 replaces B26S0		0	10		16.3		59	
↓ 35	↓	↓	-5	10	↓	16.3		60	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICENTS IDVAR(1) IDVAR(2) NDV

α OR β SCHEDULES

TABLE II.- Concluded

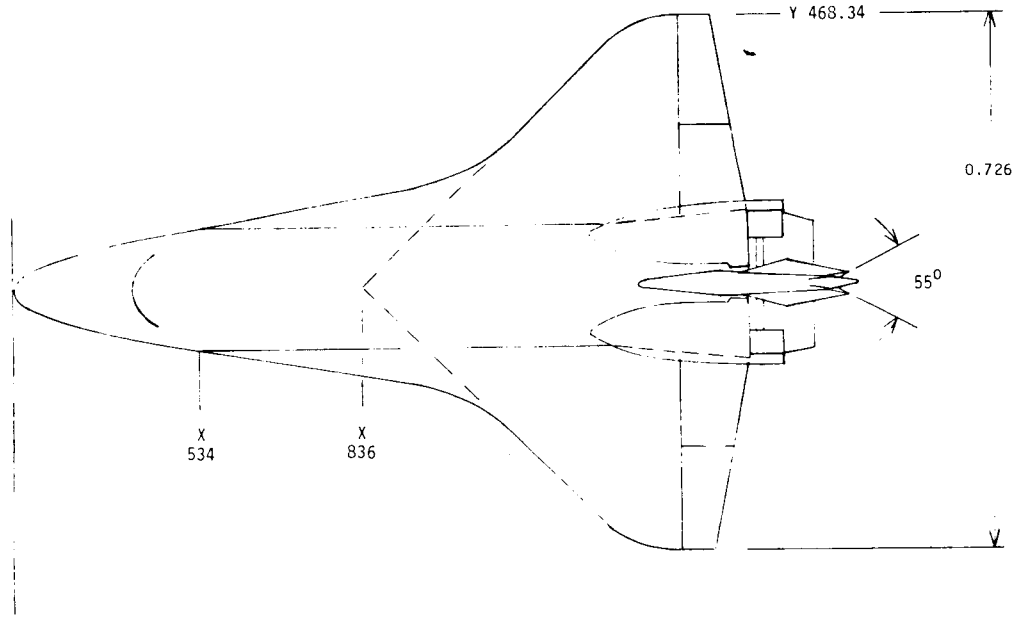
TEST: CFHT 104 (LA-47) | DATA SET RUN NUMBER COLLATION SUMMARY | DATE: 11/74

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	δSB	δBF	NO. OF RUNS	MACH NUMBERS 10.3	TEST RUN NUMBERS
RHH036	B2S2 replaces B26S0	A	0	-40	55	-11.7		57	
37	↓	↓	-5	-40	↓	-11.7		58	
38	B2 (replaces B26)+C3		0	10		16.3		61	
39	↓		-5	10		16.3		62	
40			0	-40		-11.7		71	
41	↓		-5	-40		-11.7		72	
42	B4 replaces B26		0	10		16.3		51	
43	↓		-5	10		16.3		52	
44			0	-40		-11.7		53	
45	↓	↓	-5	-40	↓	-11.7		54	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

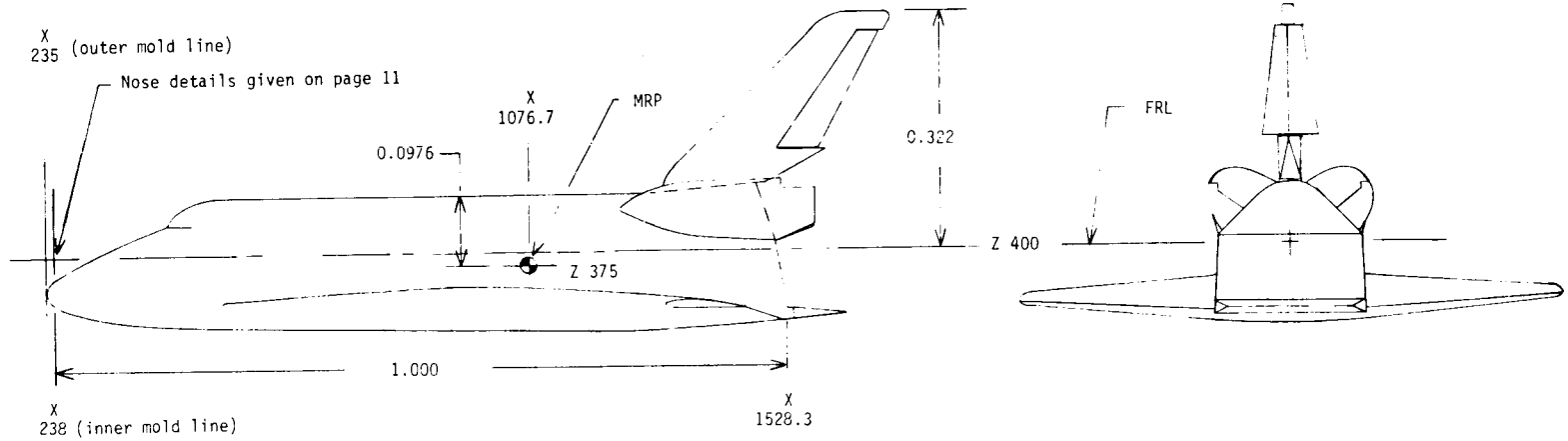
COEFFICIENTS

α OR β SCHEDULES



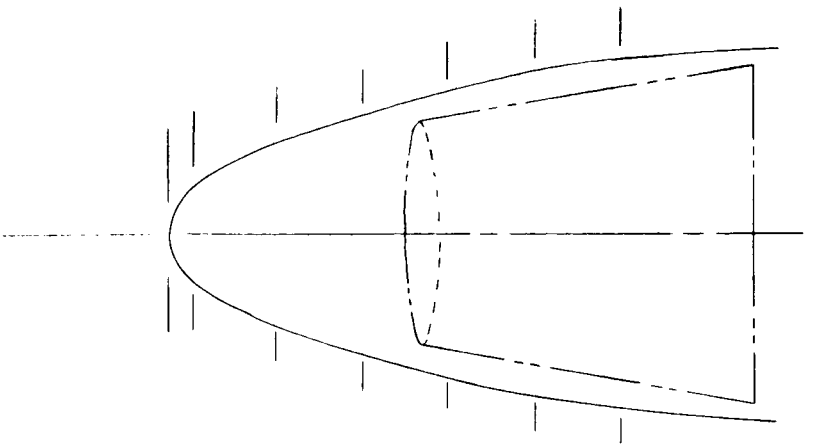
REFERENCE DIMENSIONS (FULL SCALE)

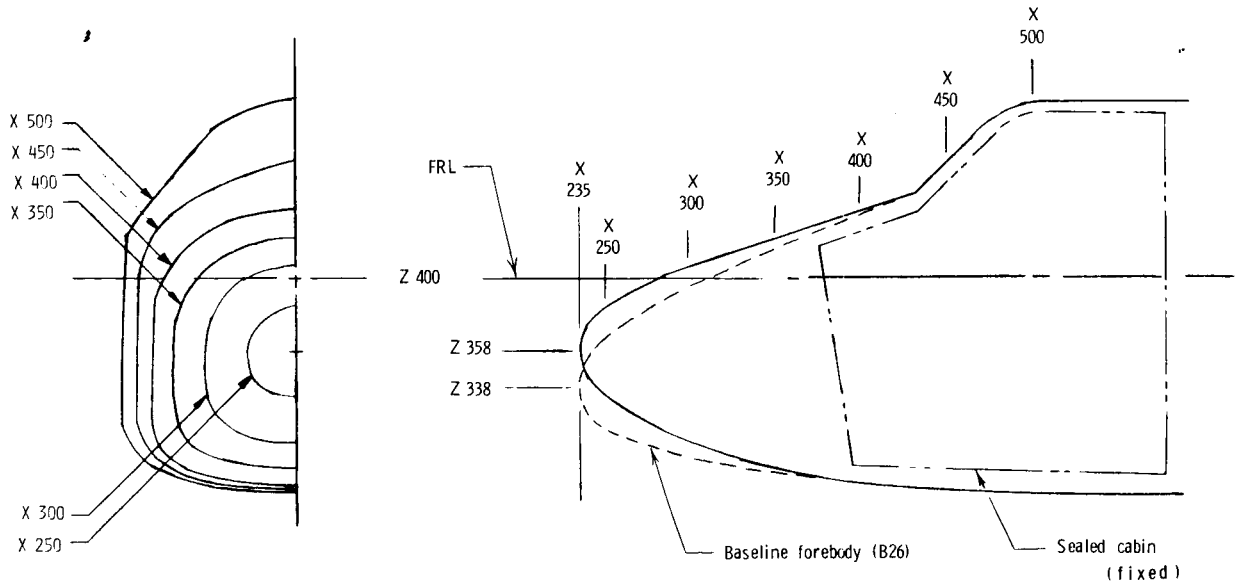
AREA	$S = 249.9\ m^2$	$(2690\ ft.^2)$
MAC	$\bar{c} = 12.06\ m$	(474.8 in.)
SPAN	$b = 23.79\ m$	(936.68 in.)
LENGTH	$\ell = 32.77\ m$	(1290.3 in.)



(a) 140 A/B orbiter baseline model

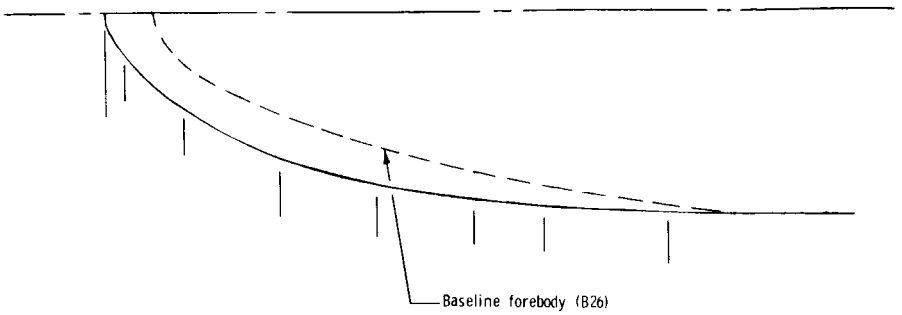
Figure 1.- Sketches of baseline orbiter and model modifications. Full scale station locations, x, y, and z are indicated in inches. Other geometric dimensions are normalized by reference length, ℓ.

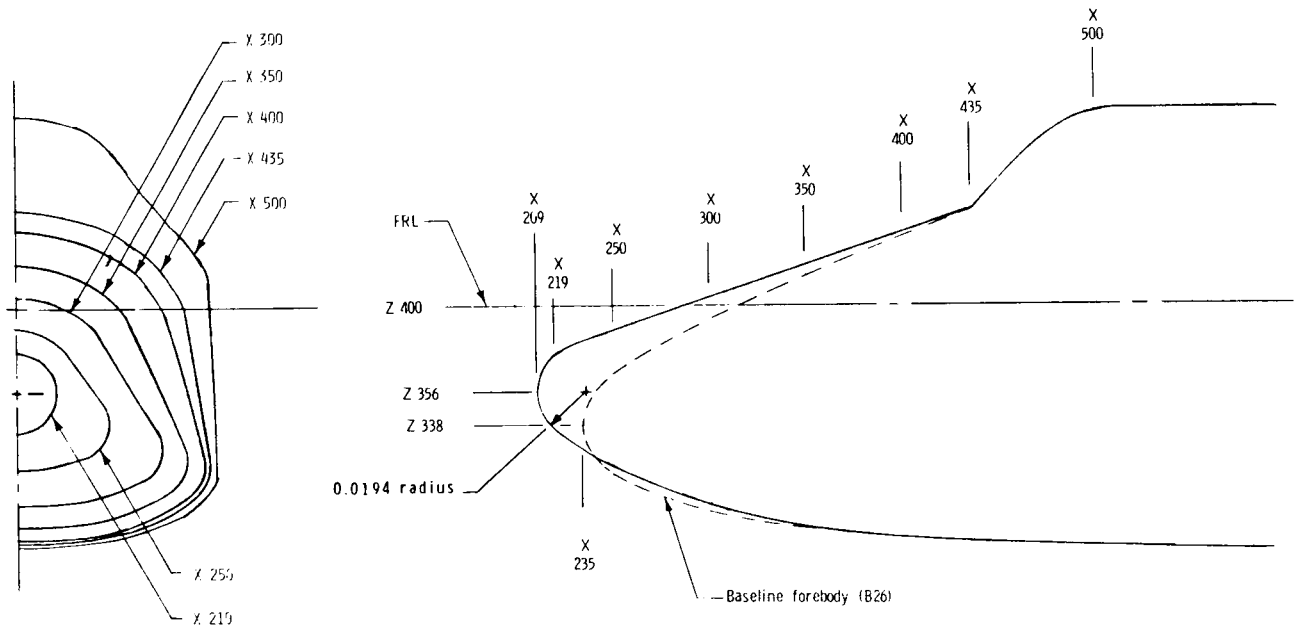




(b) Forebody modification B2

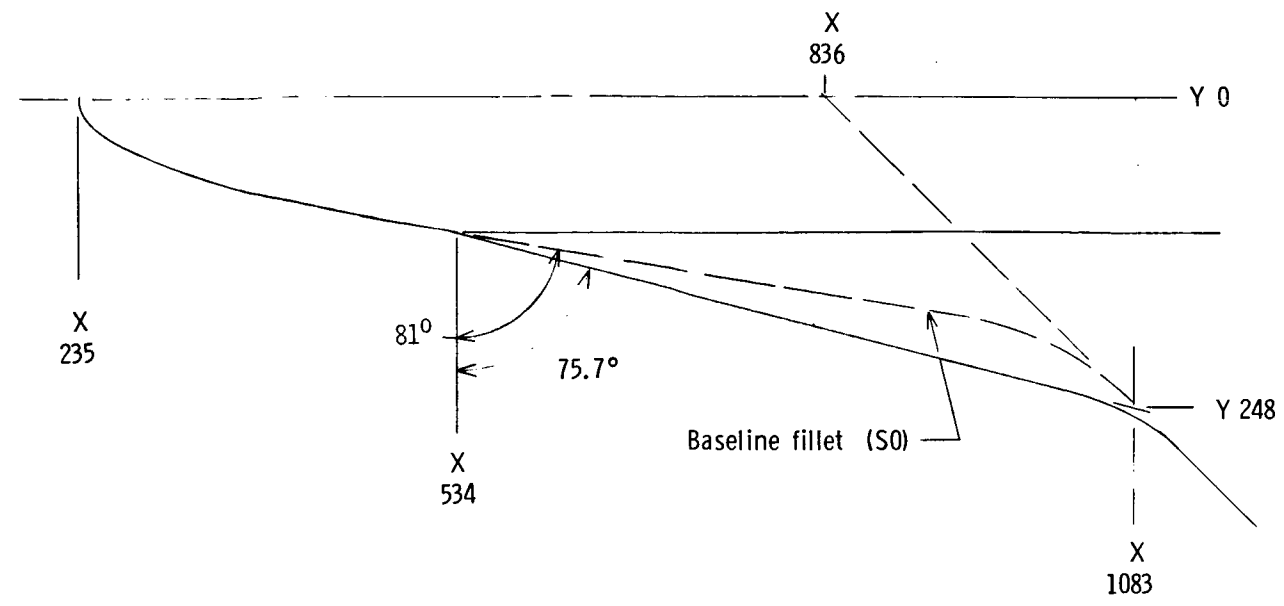
Figure 1. - Continued.



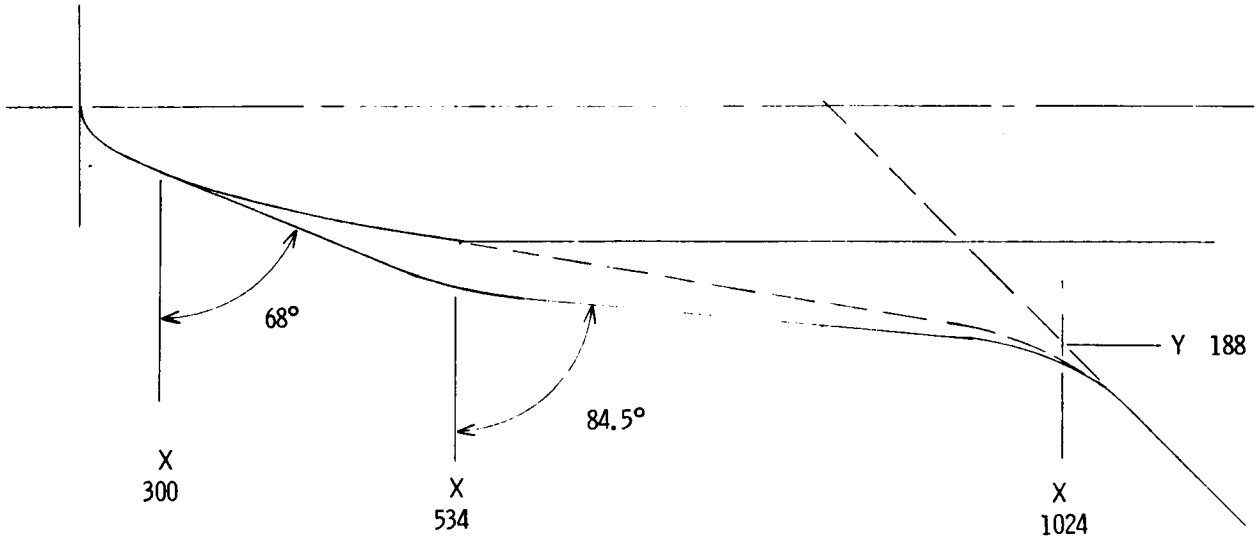


(c) Forebody modification B4

Figure 1. - Continued.



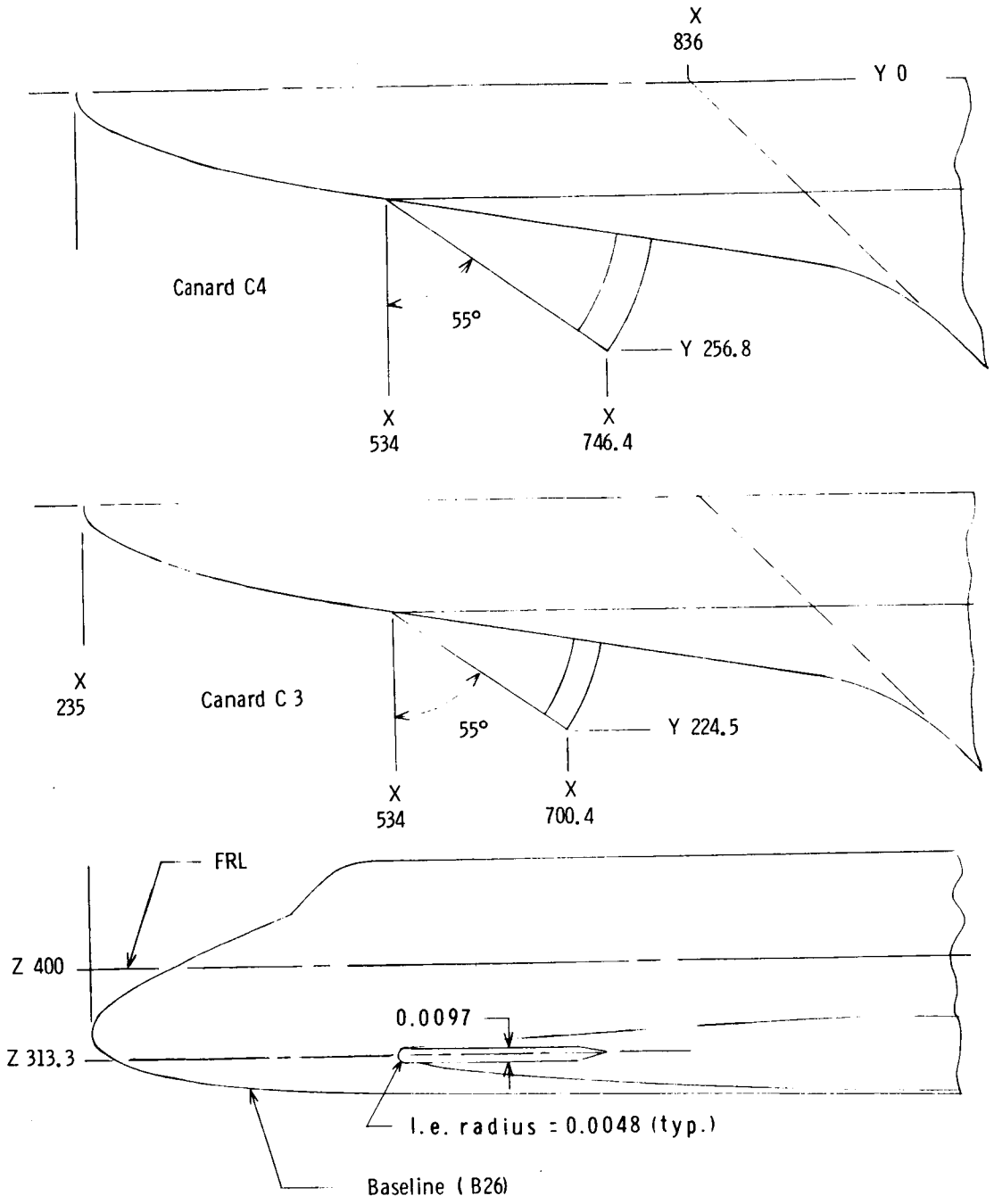
Fillet S1



Fillet S2

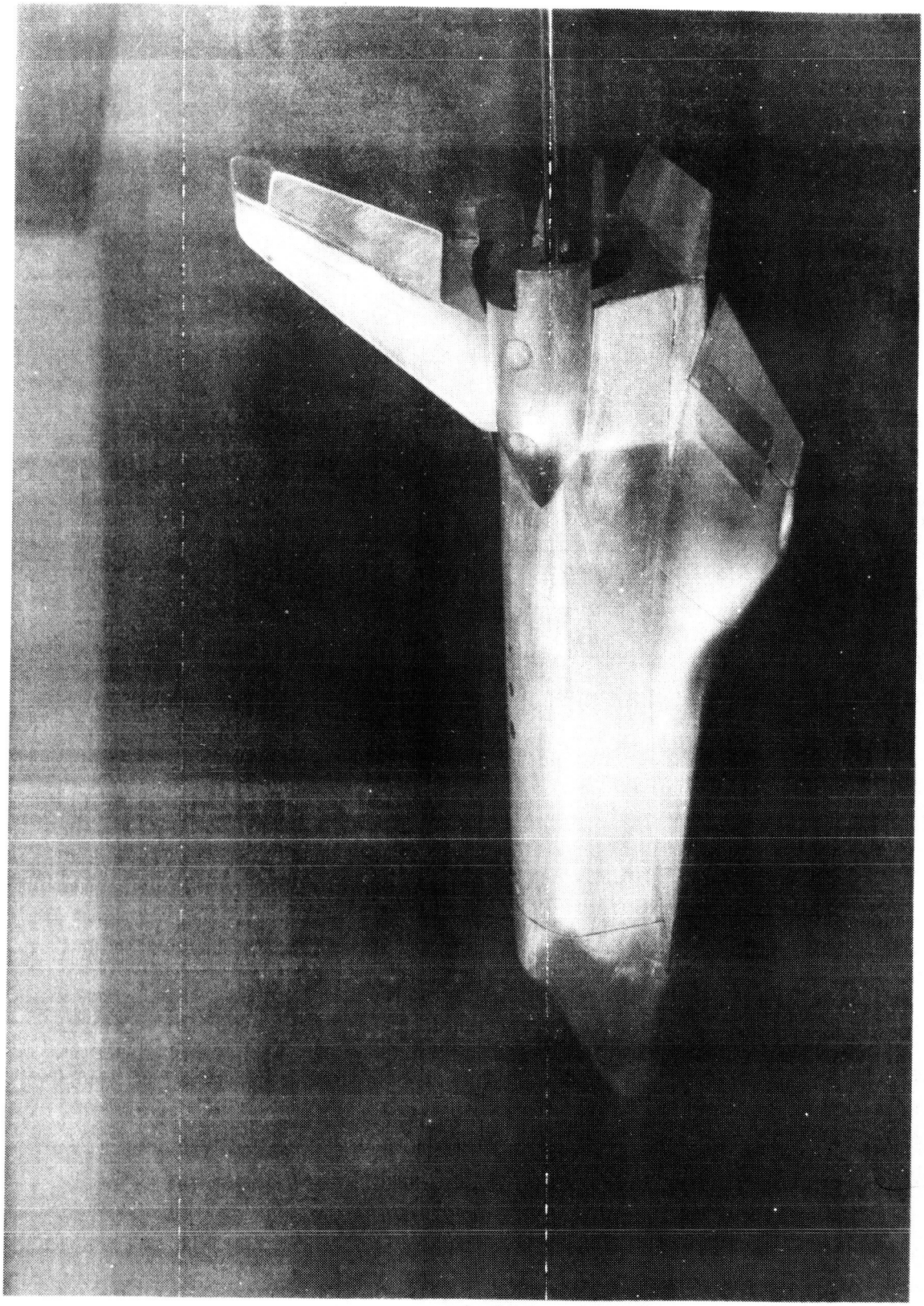
(d) Wing - body fillets

Figure 1. - Continued.

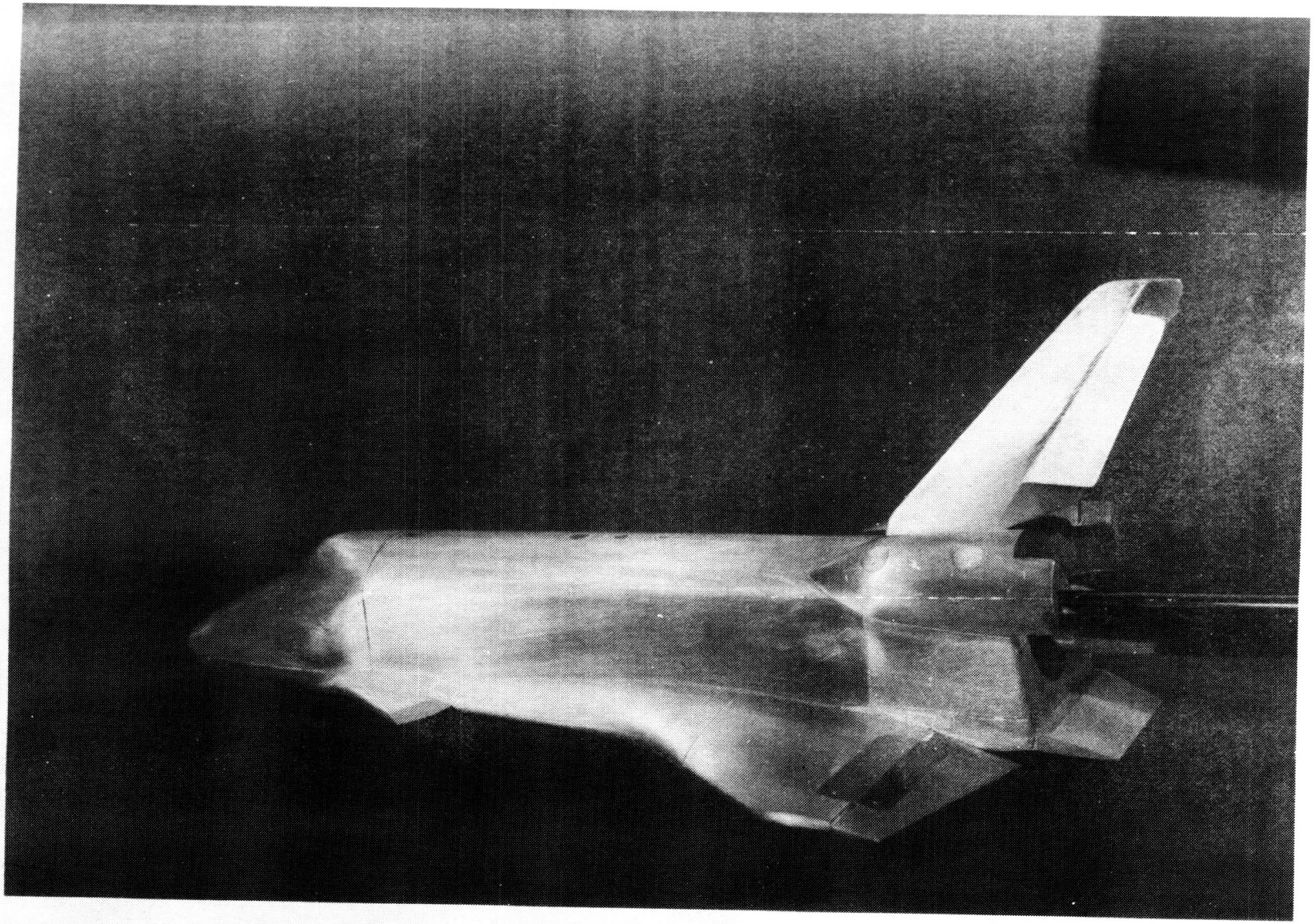


(e) Canard trimmers

Figure 1. - Concluded.

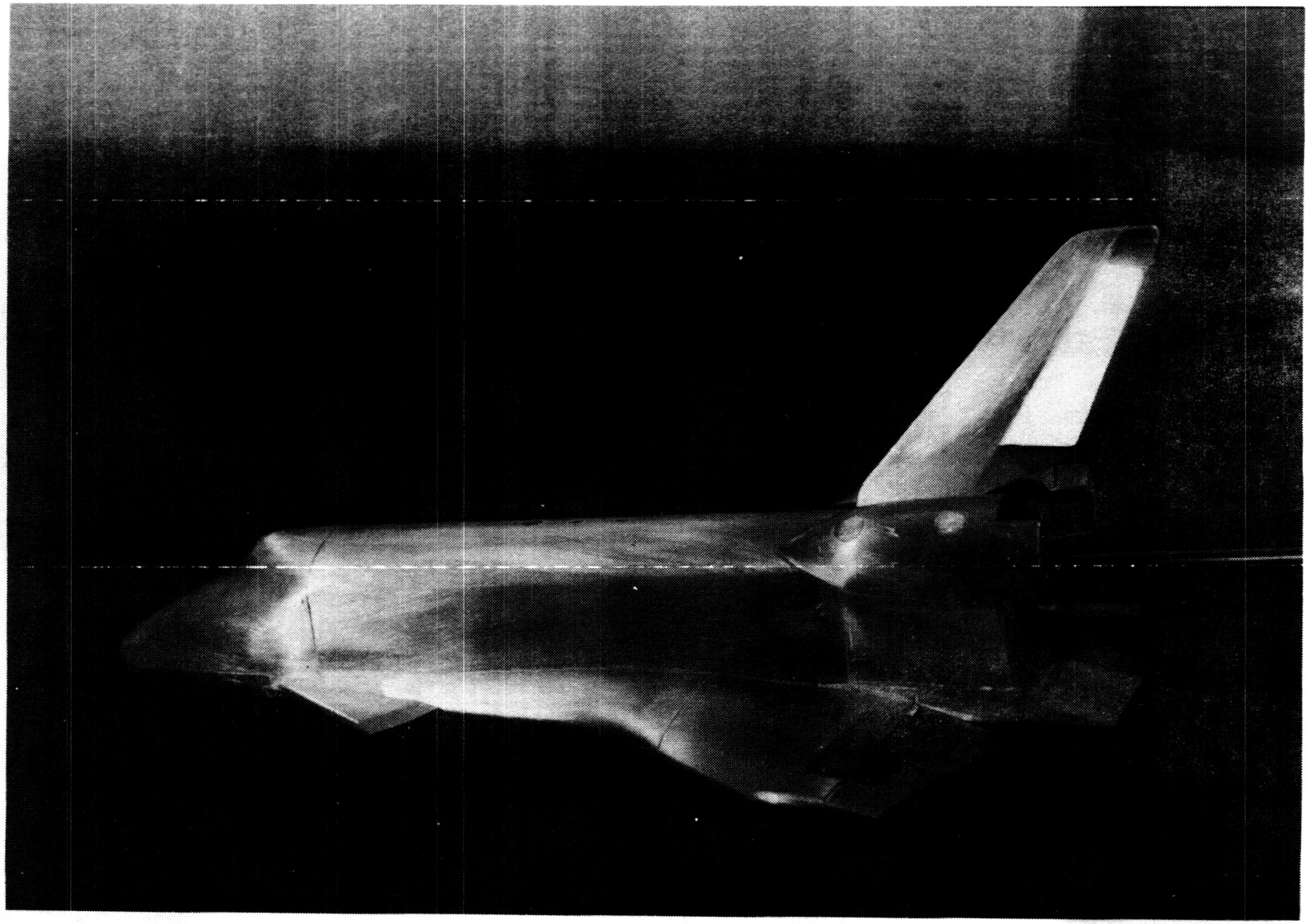


(a) Baseline 140 A/B orbiter model



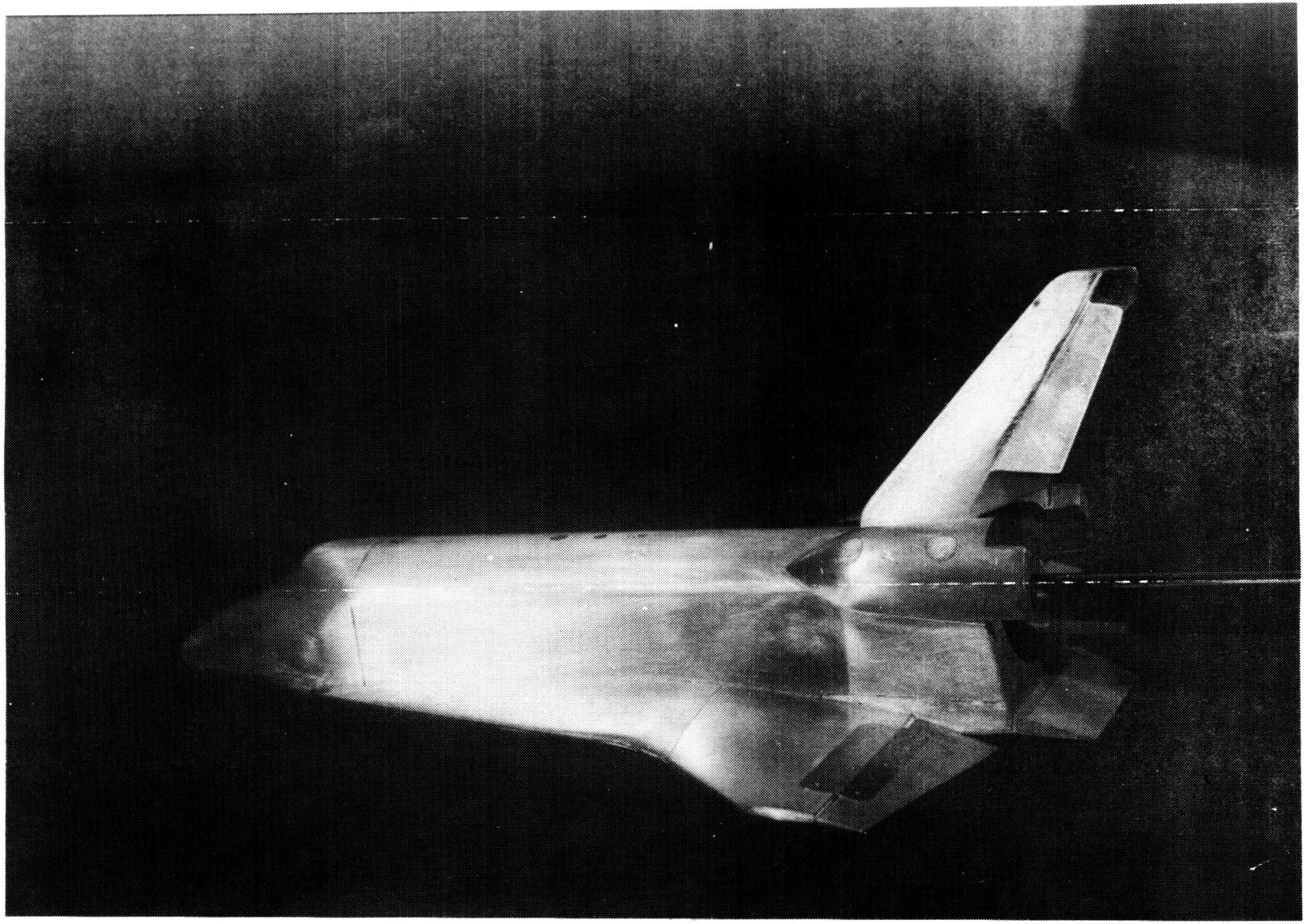
(b) Modified model with C3 canard trimmer

Figure 2.- Continued.



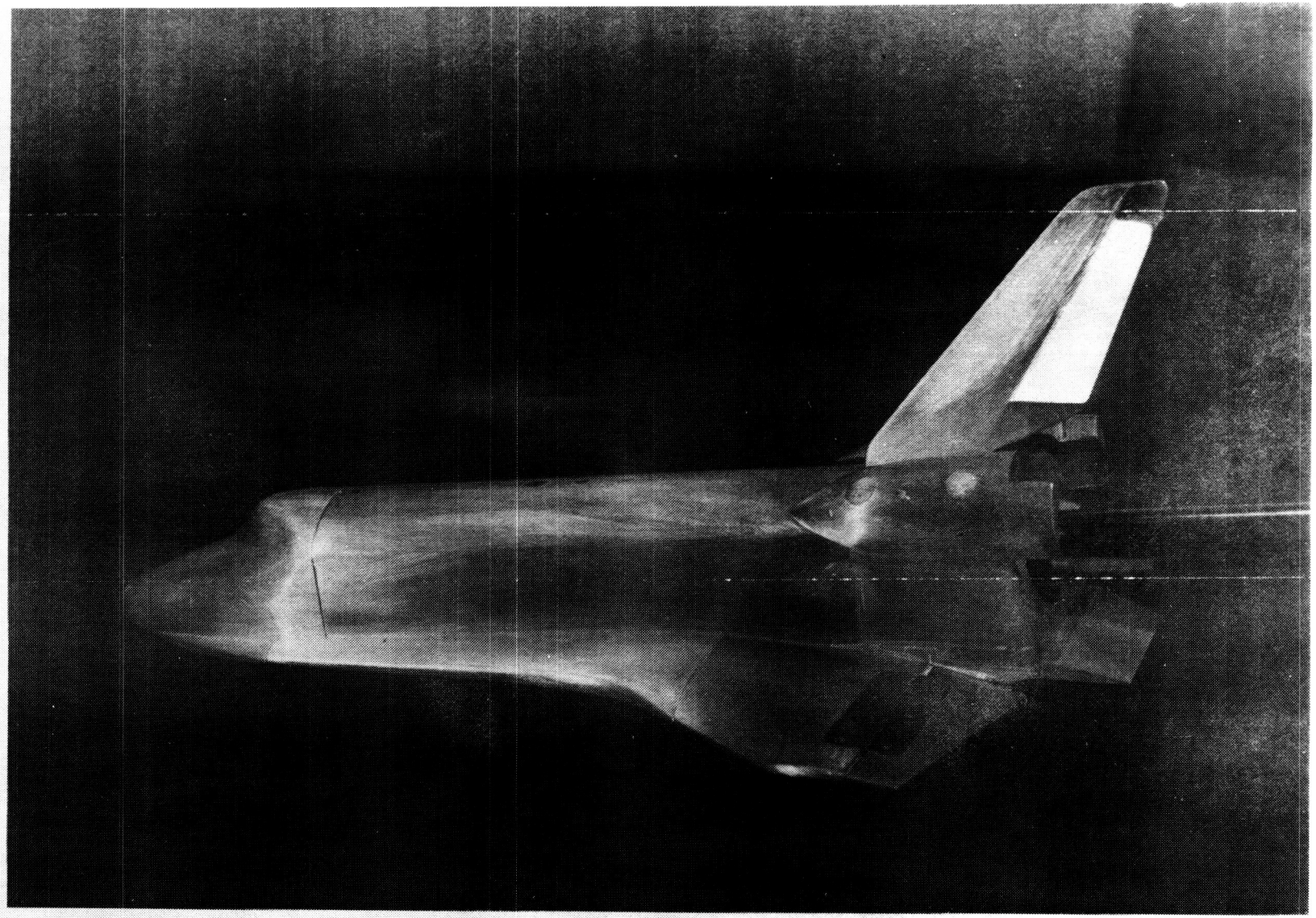
(c) Modified model with C4 canard trimmer

Figure 2.- Continued.



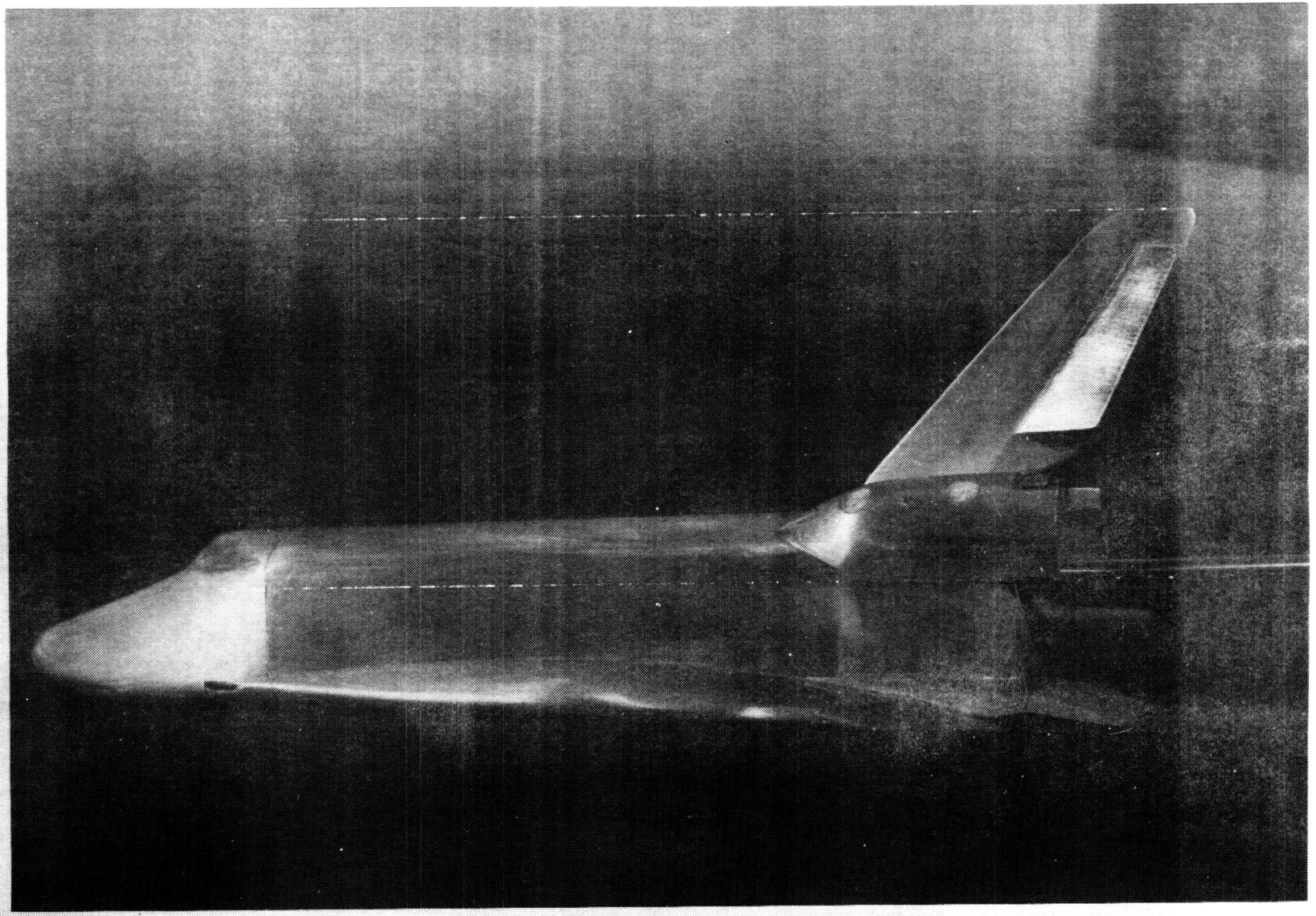
(d) Modified model with S1 fillet

Figure 2.- Continued.



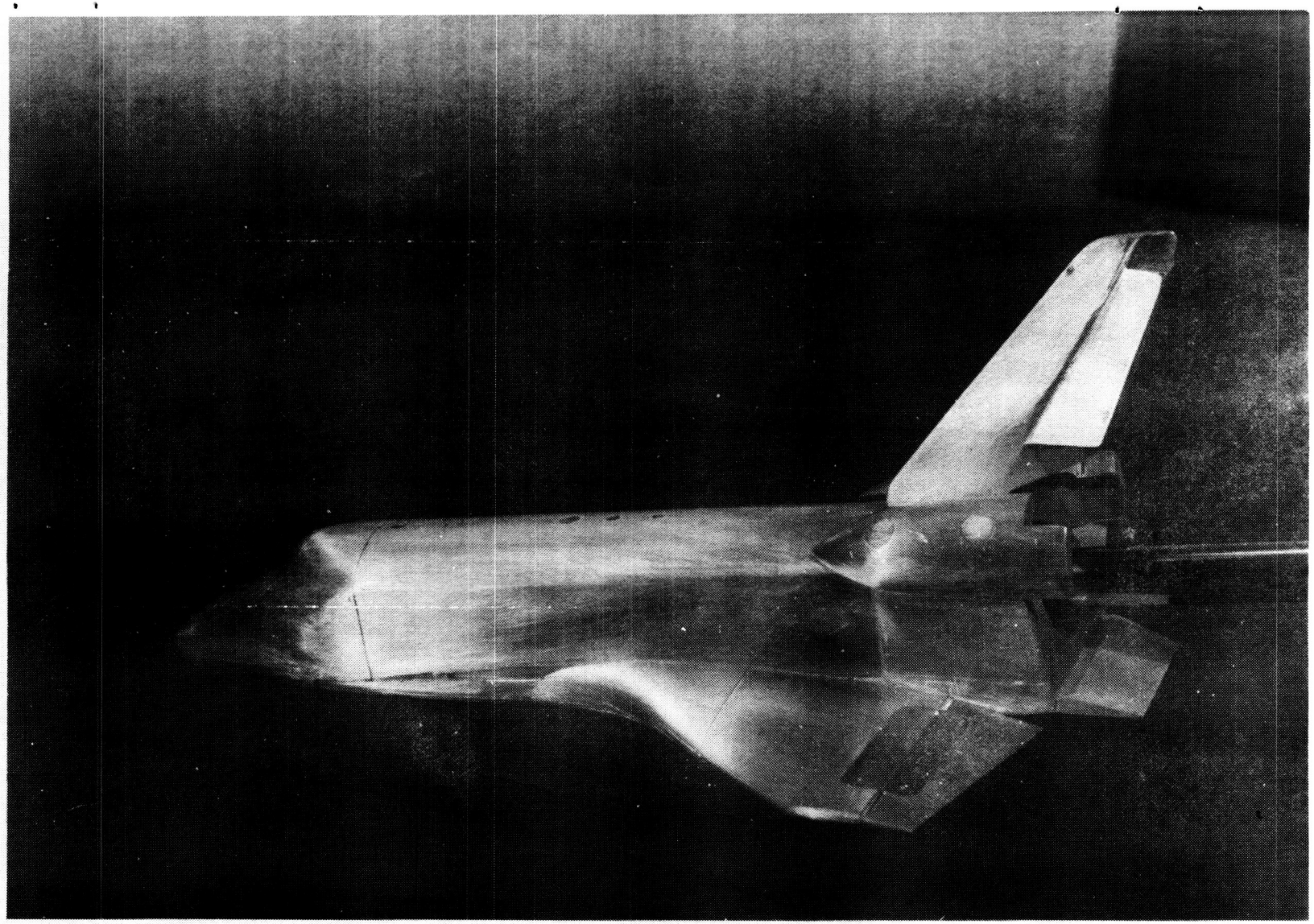
(e) Modified model with B2 forebody and S2 fillet

Figure 2.- Continued.



(f) Modified model with B4 forebody

Figure 2.- Continued.



(g) Modified model with fillet removed

Figure 2.- Concluded.

Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

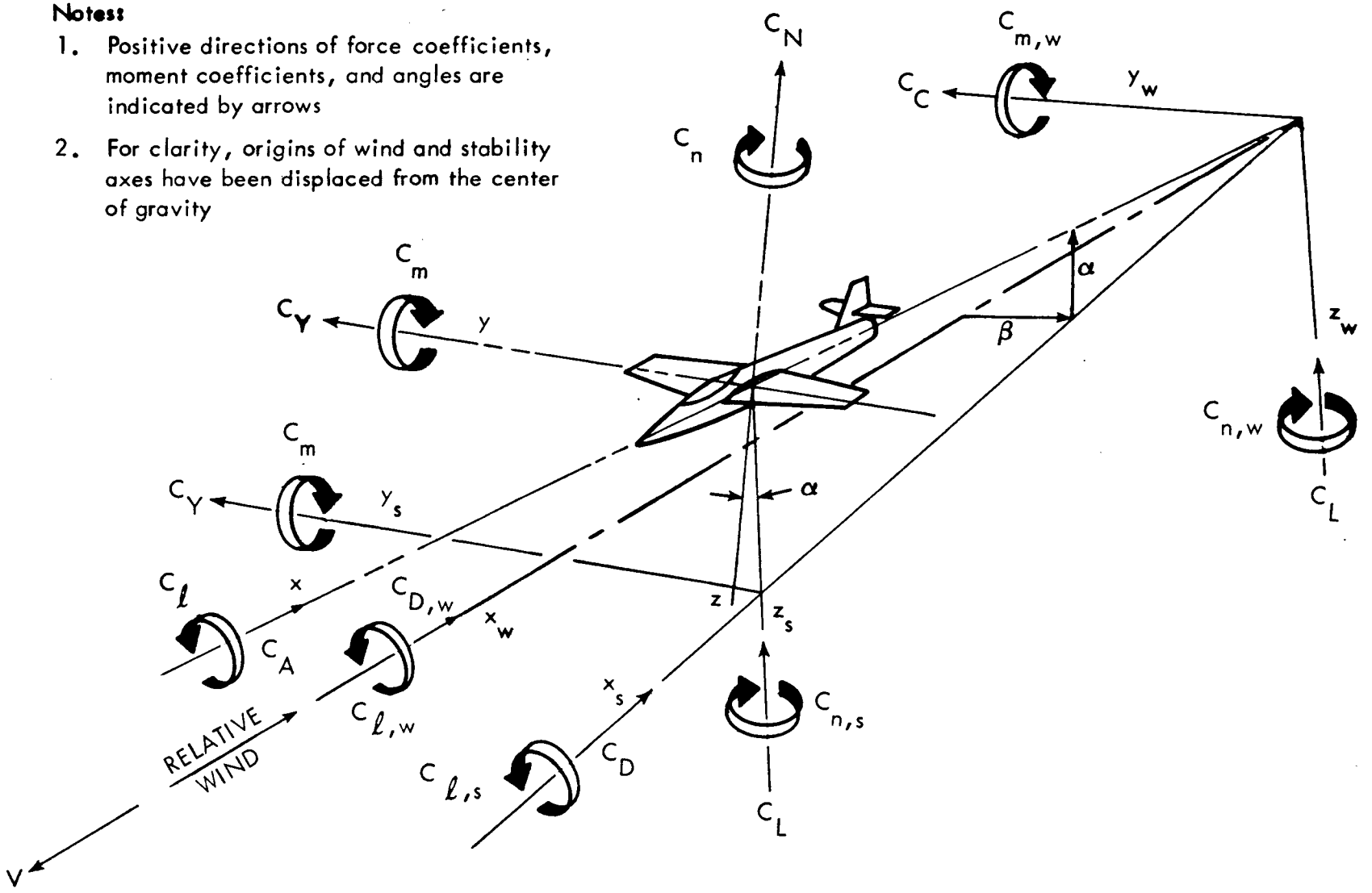


Figure 3.- Axis systems

DATA FIGURES

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH030)	◇	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH042)	△	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(RHH032)	◇	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(RHH044)	△	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

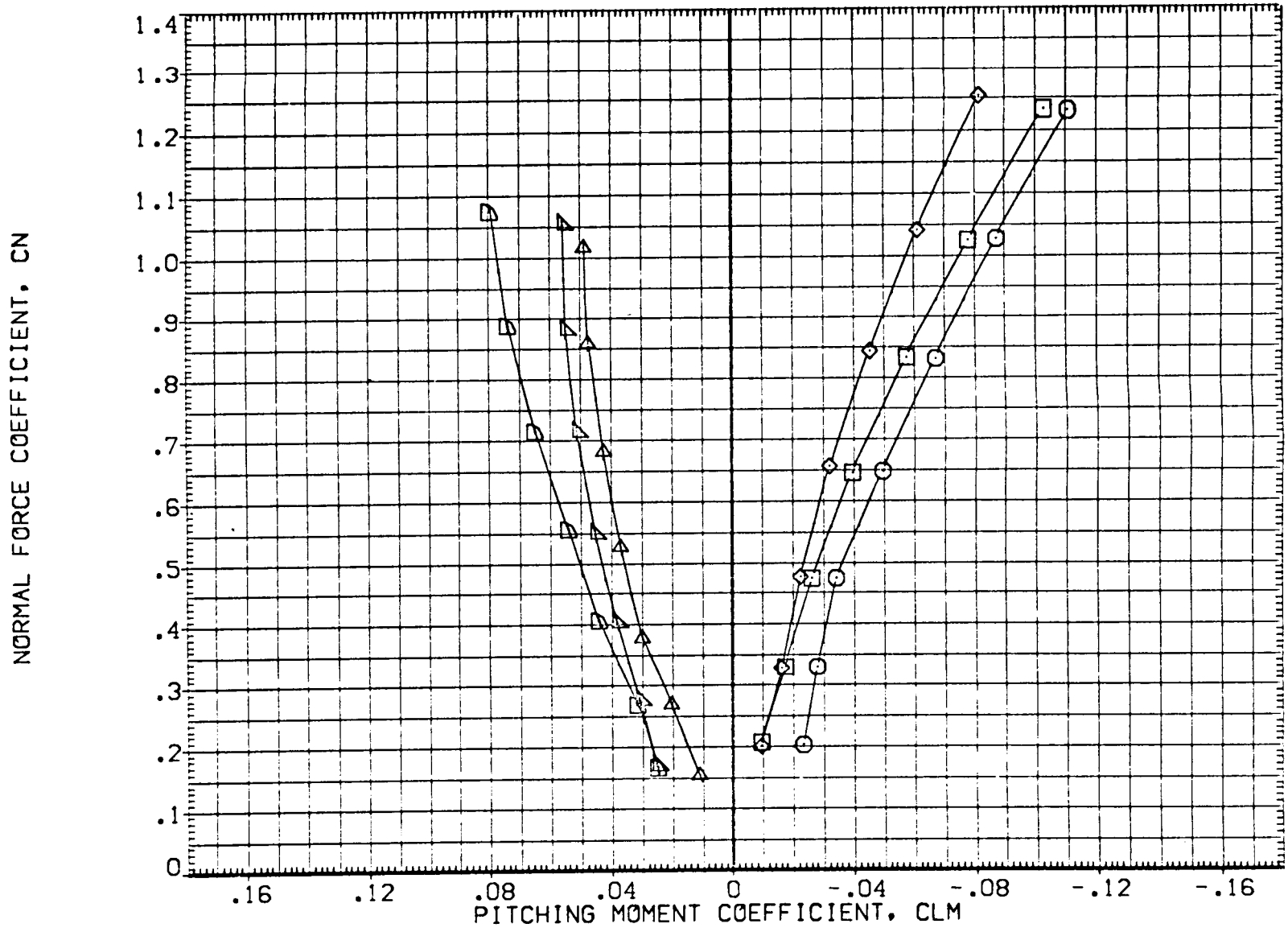


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

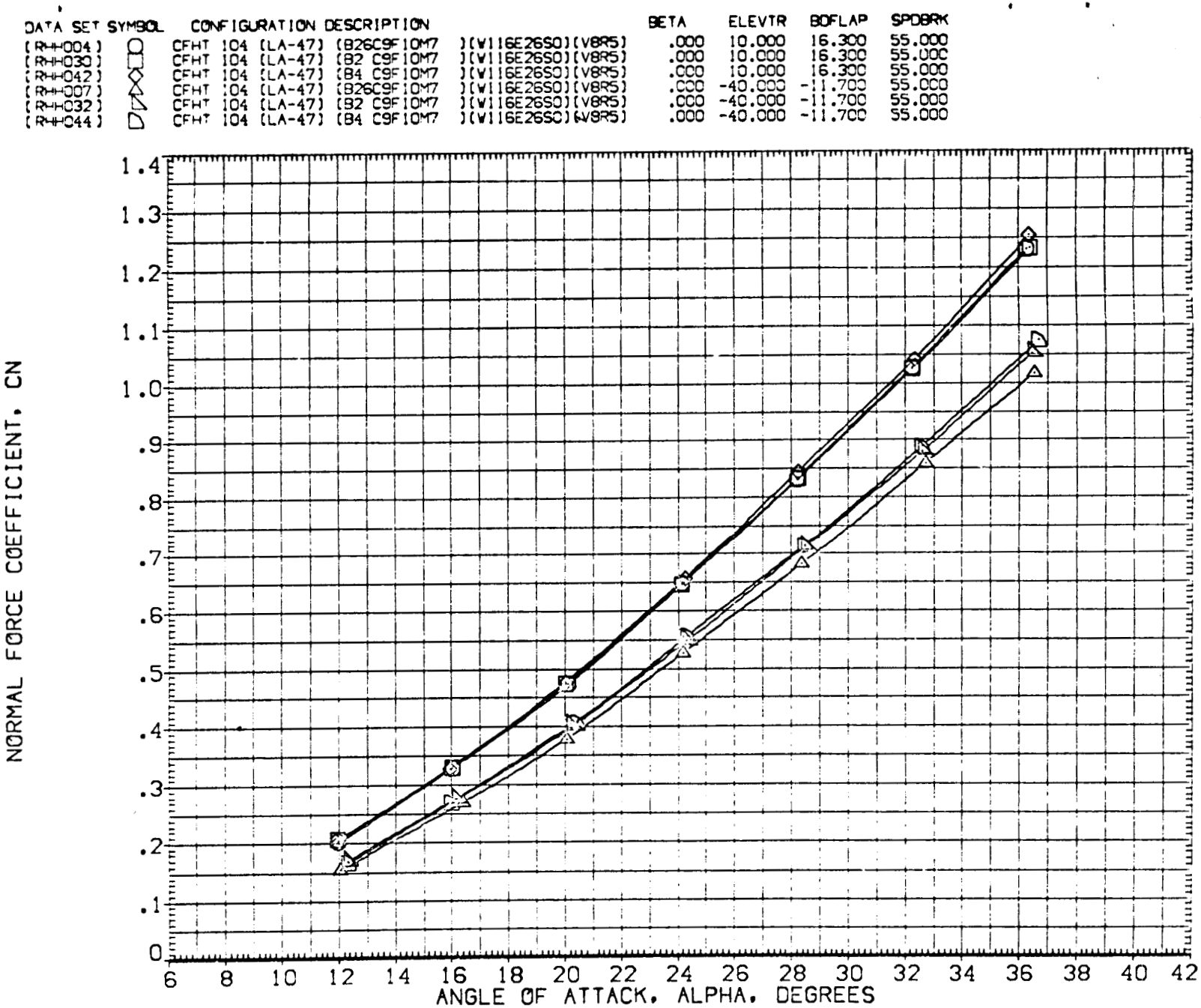


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH004)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH030)	□	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH042)	△	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH032)	□	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH044)	△	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

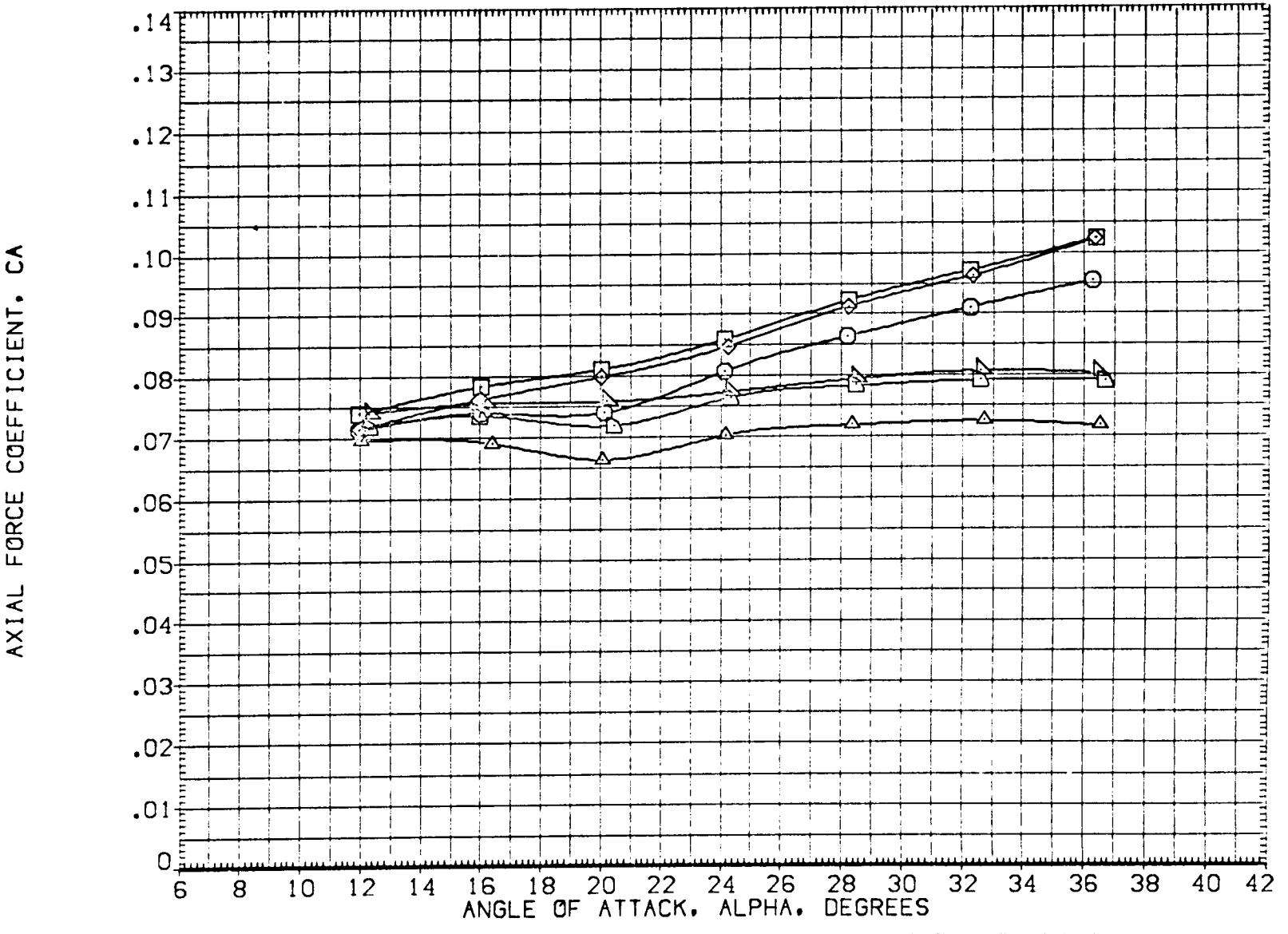


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

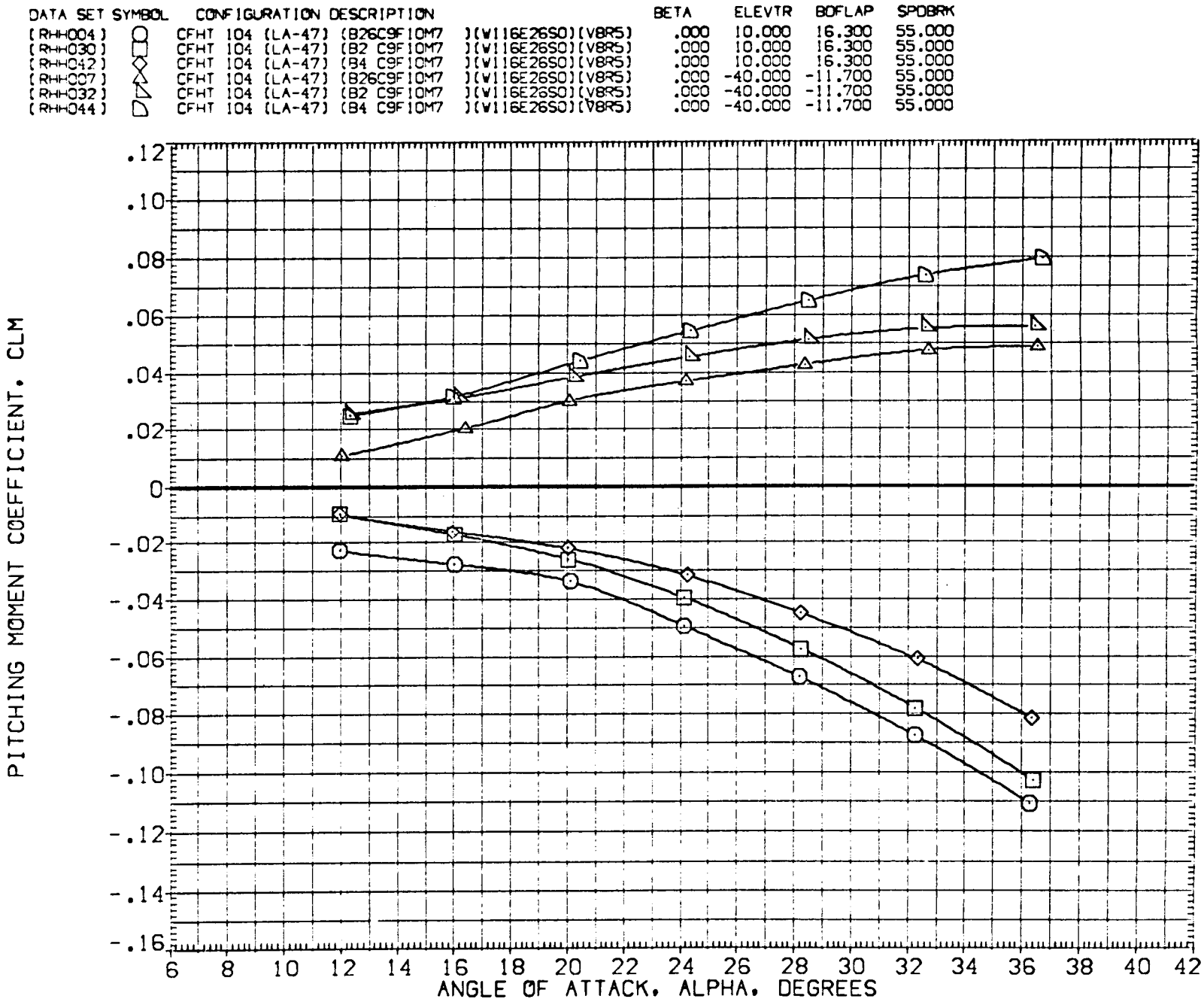


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

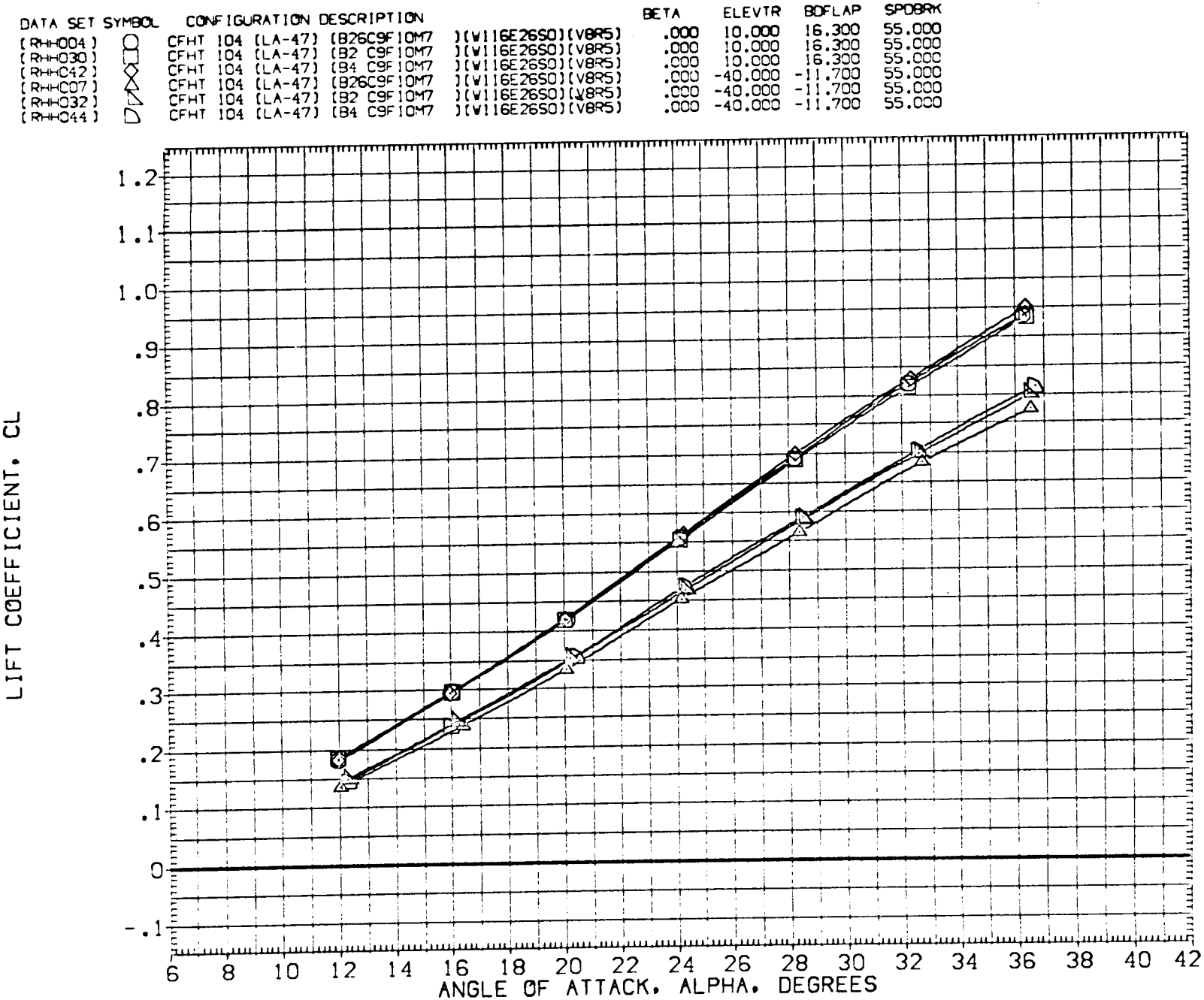


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH030)	□	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH042)	◇	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH032)	▽	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH044)	▷	CFHT 104 (LA-47) (B4 C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

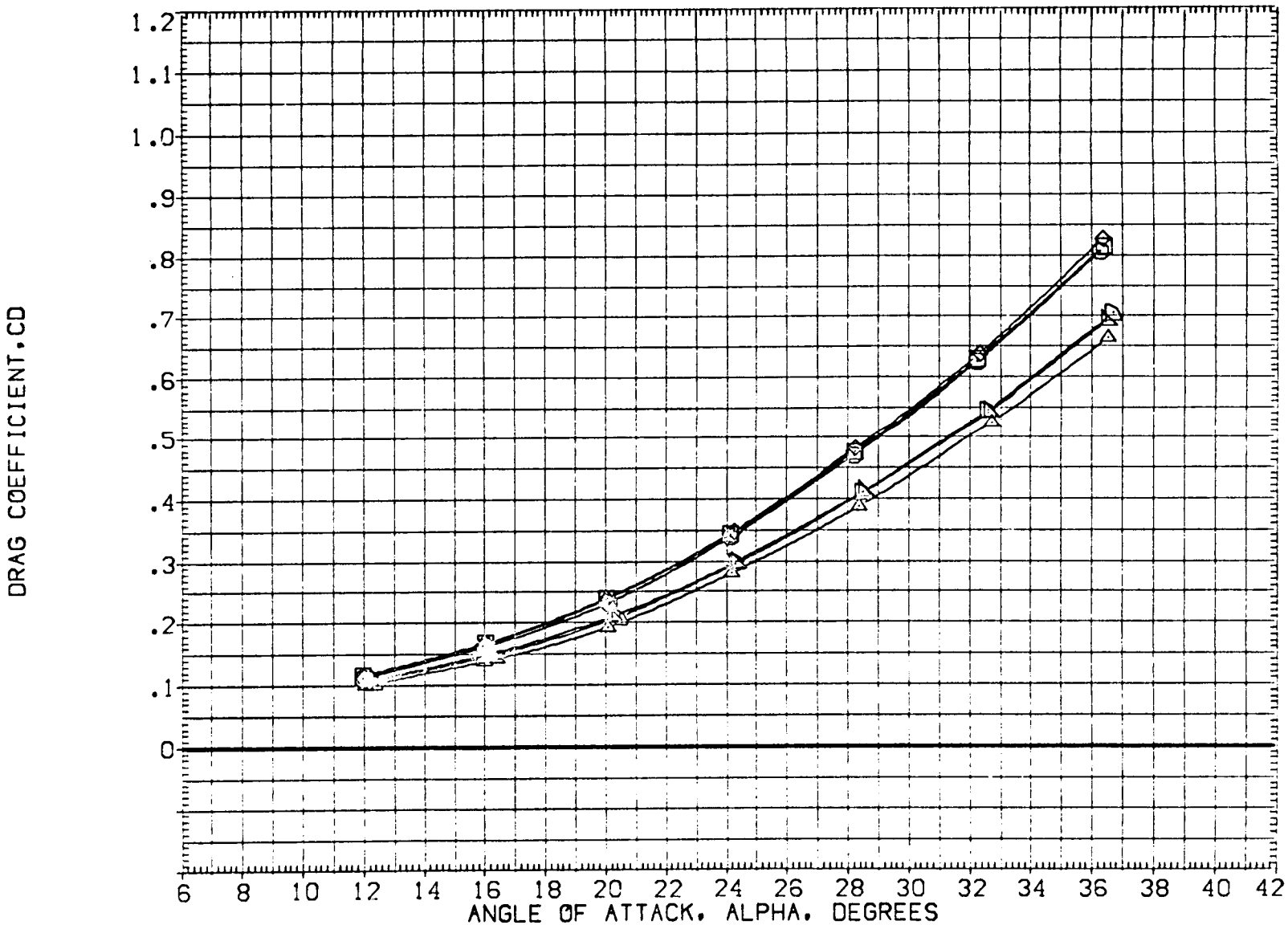


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

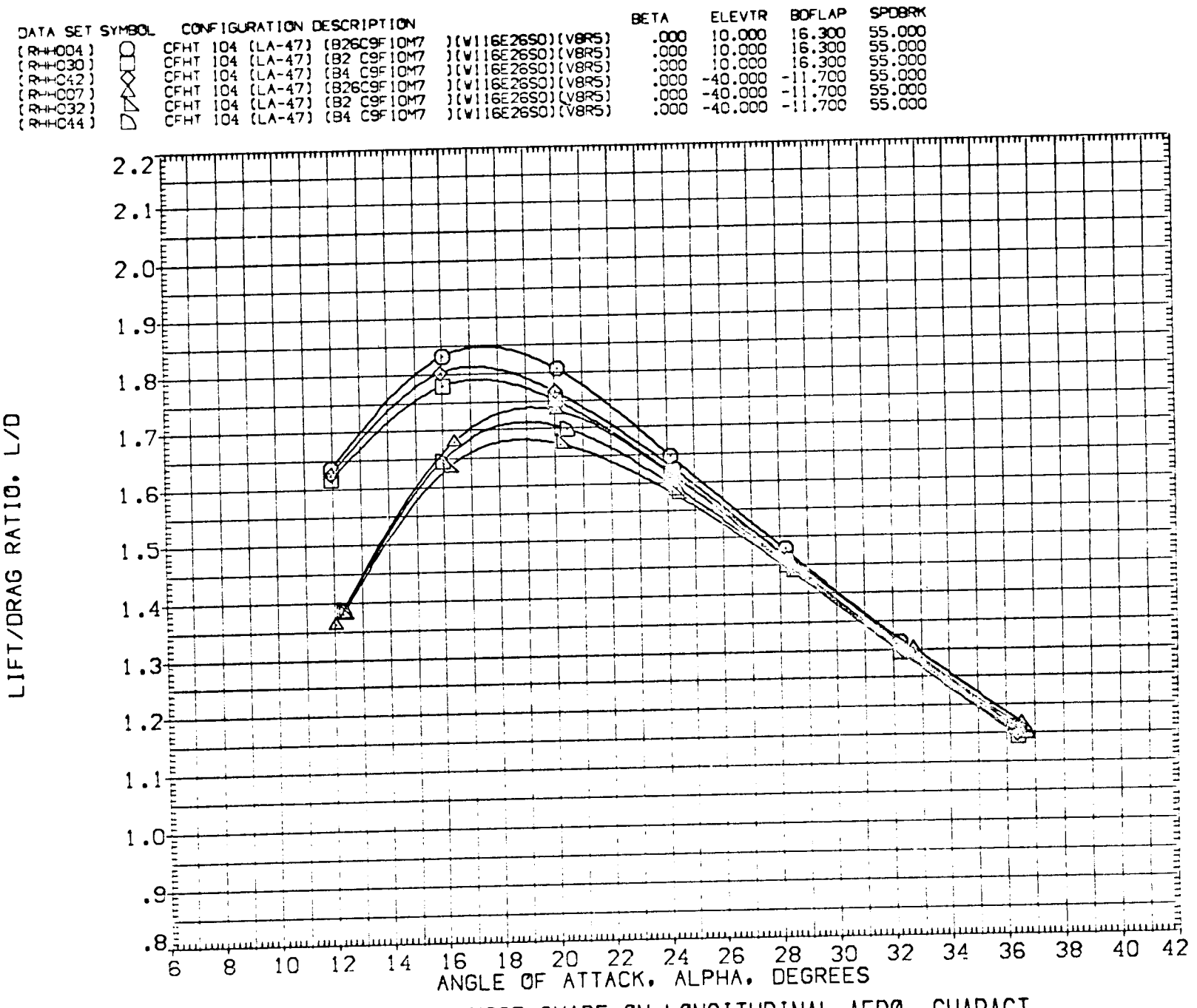


FIGURE 4. EFFECT OF ORBITER NOSE SHAPE ON LONGITUDINAL AERO. CHARACT.

(A)MACH = 10.33

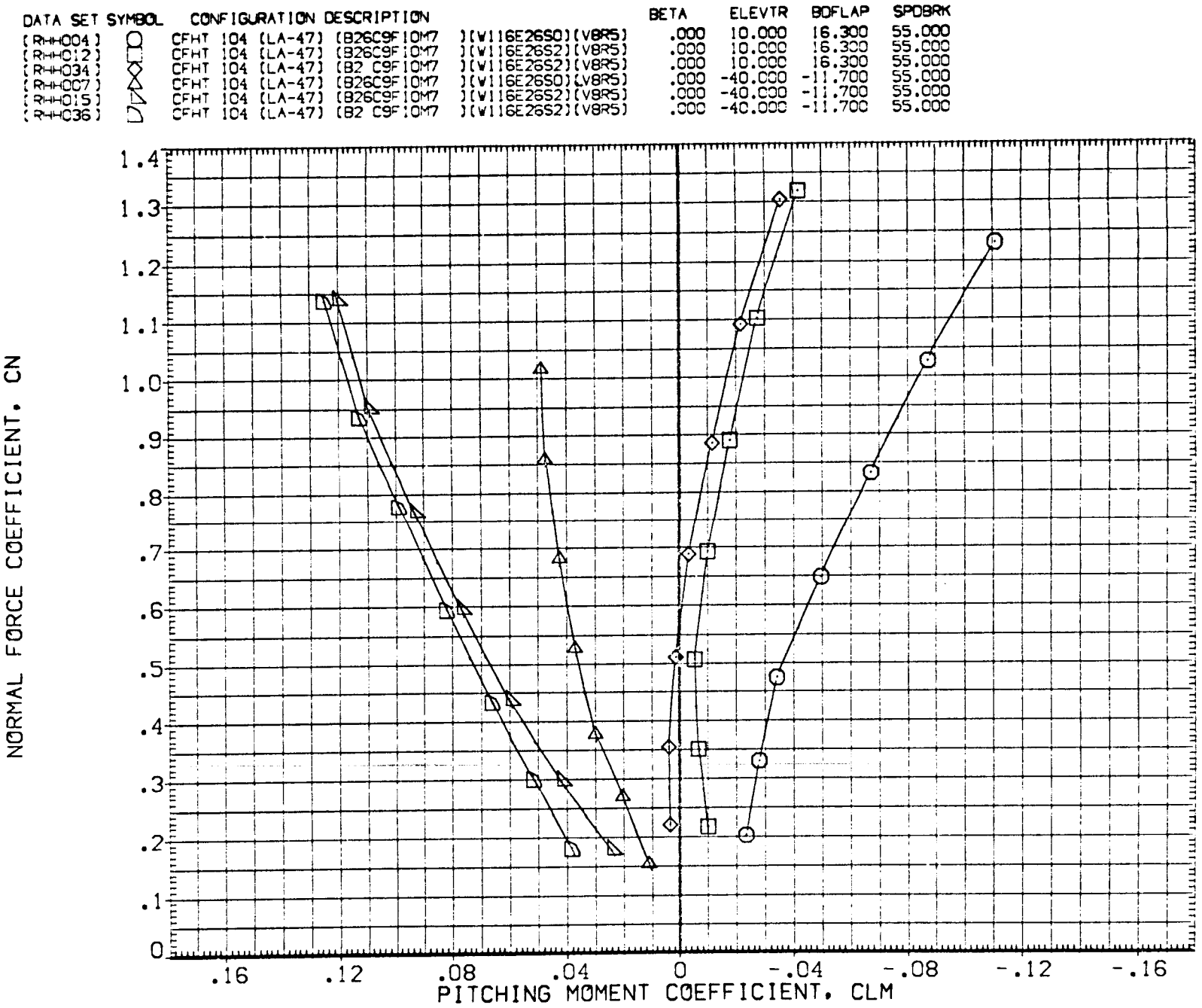


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

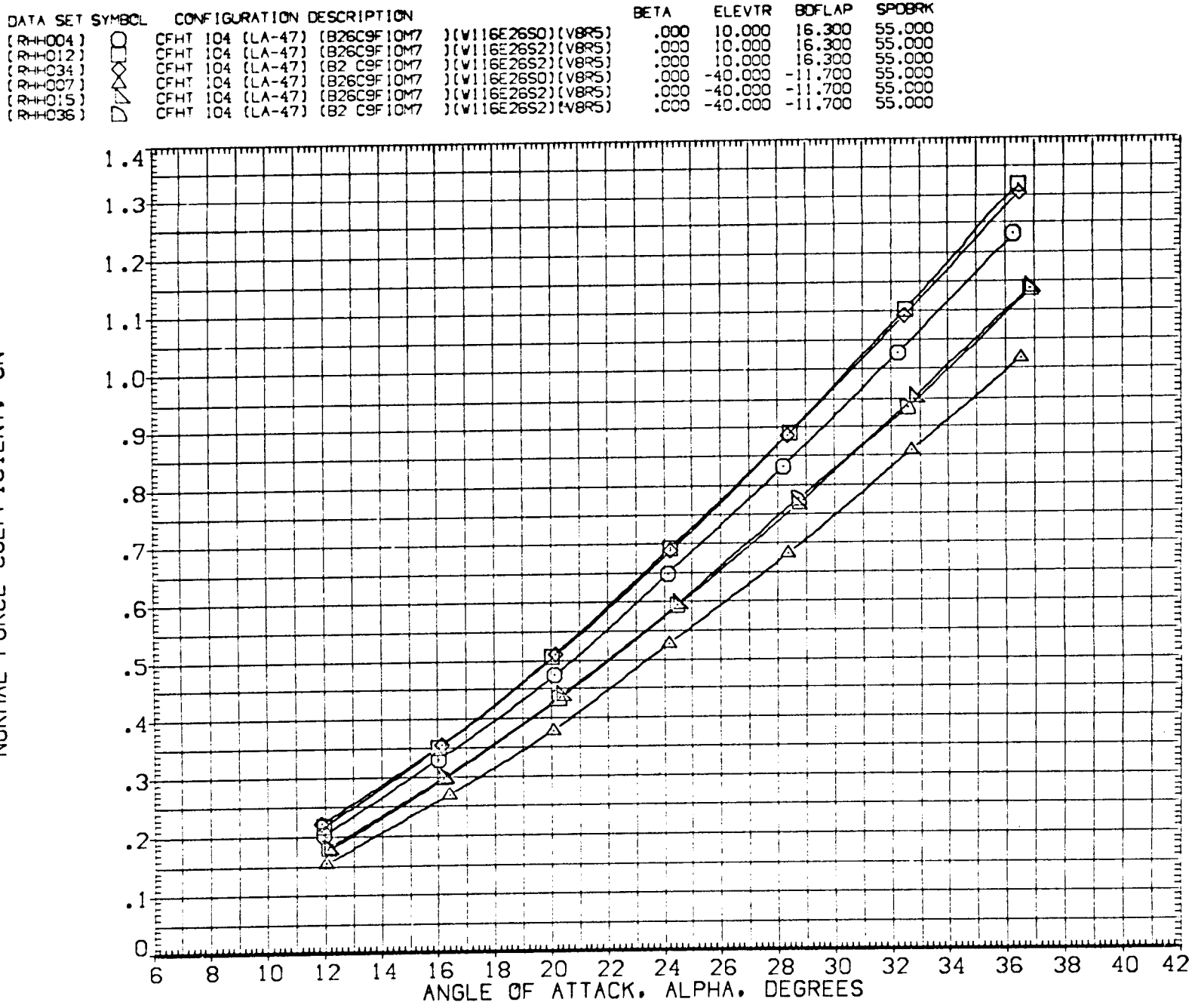


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH012)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH034)	◇	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH015)	◺	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000
(RHH036)	▱	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

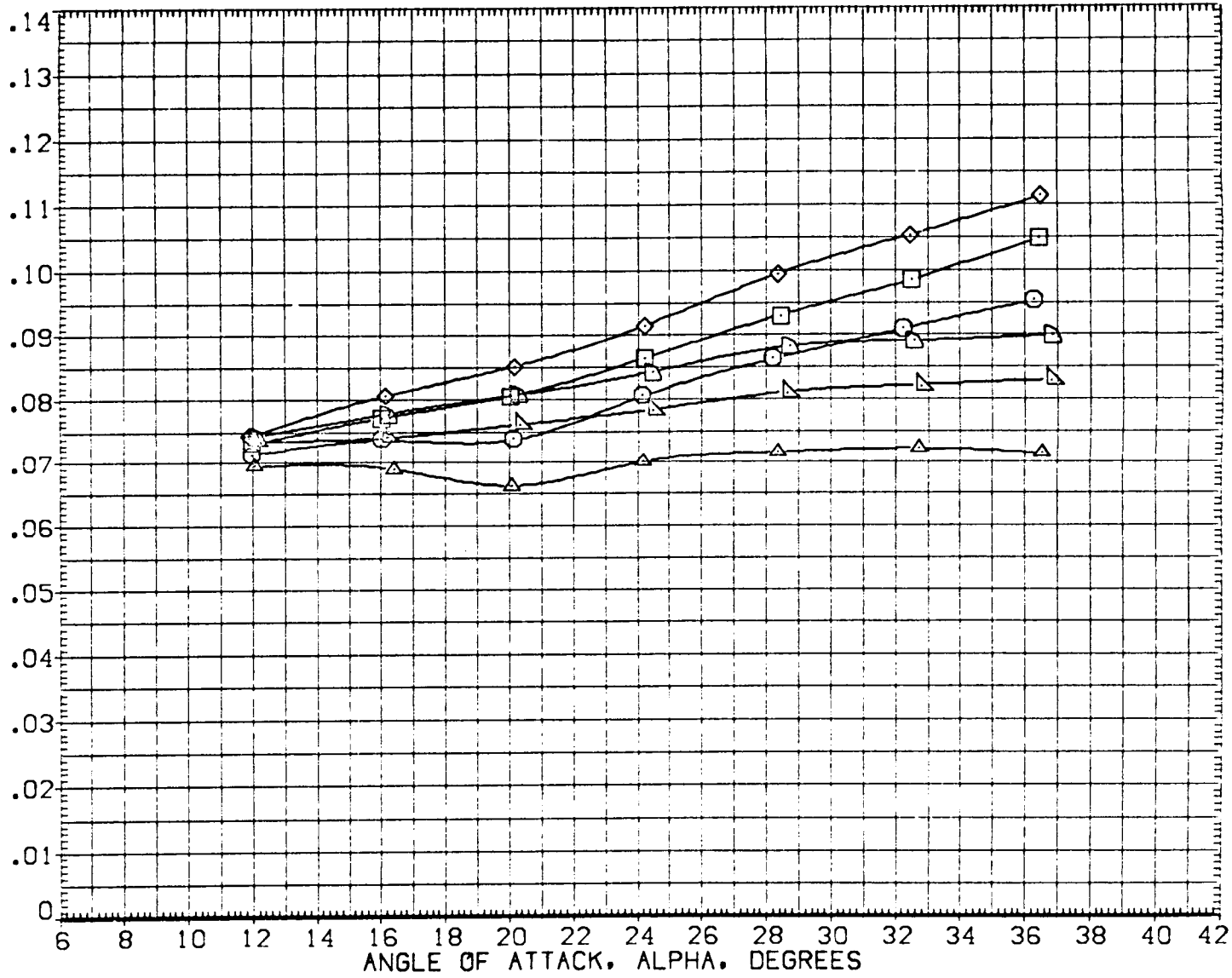


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(R##004)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##012)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##034)		CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##007)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(R##015)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000
(R##036)		CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

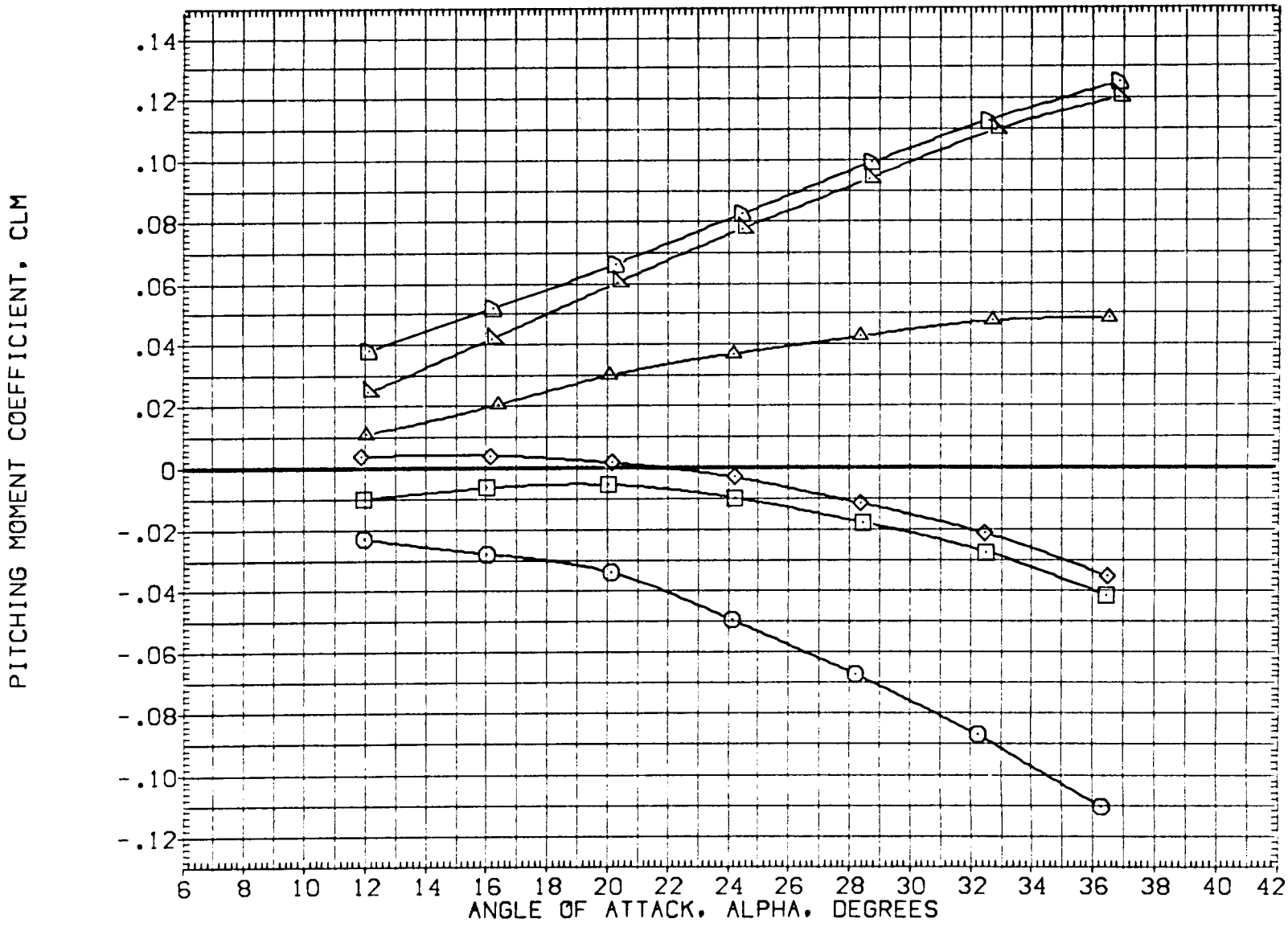


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH012)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH034)	◇	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH015)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000
(RHH036)	▷	CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

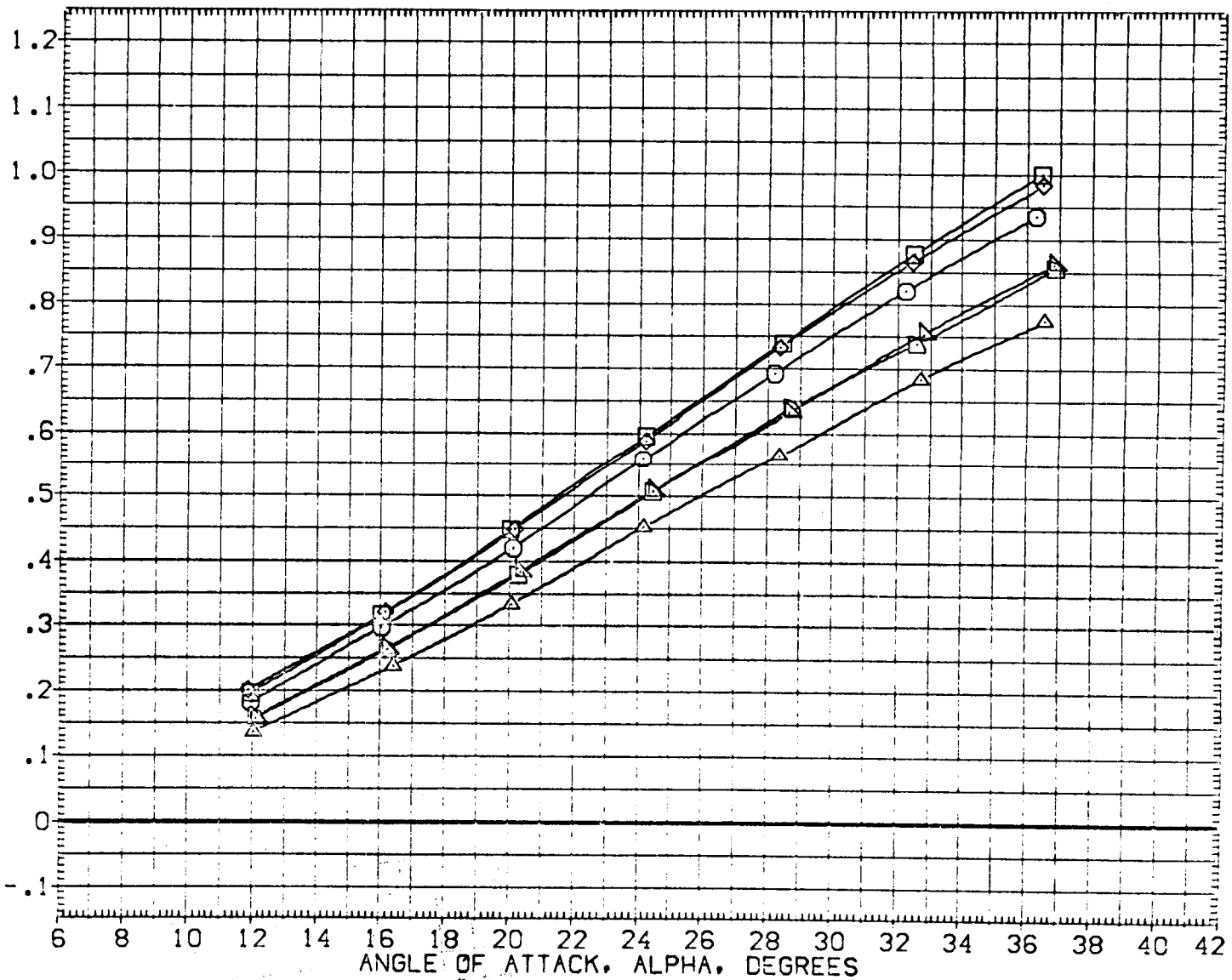


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

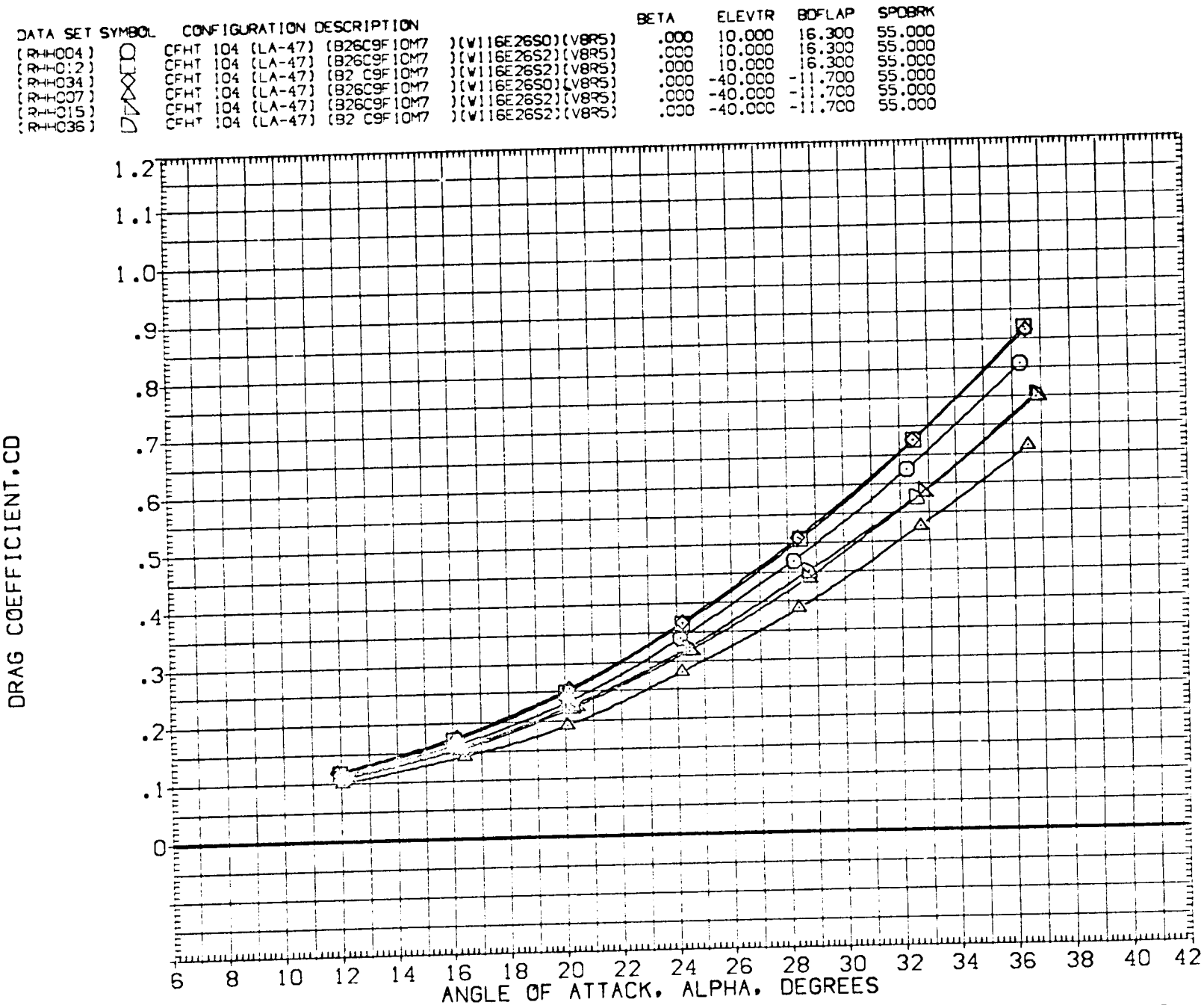


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RH004)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH012)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RH034)		CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RH007)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RH015)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000
(RH036)		CFHT 104 (LA-47) (B2 C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

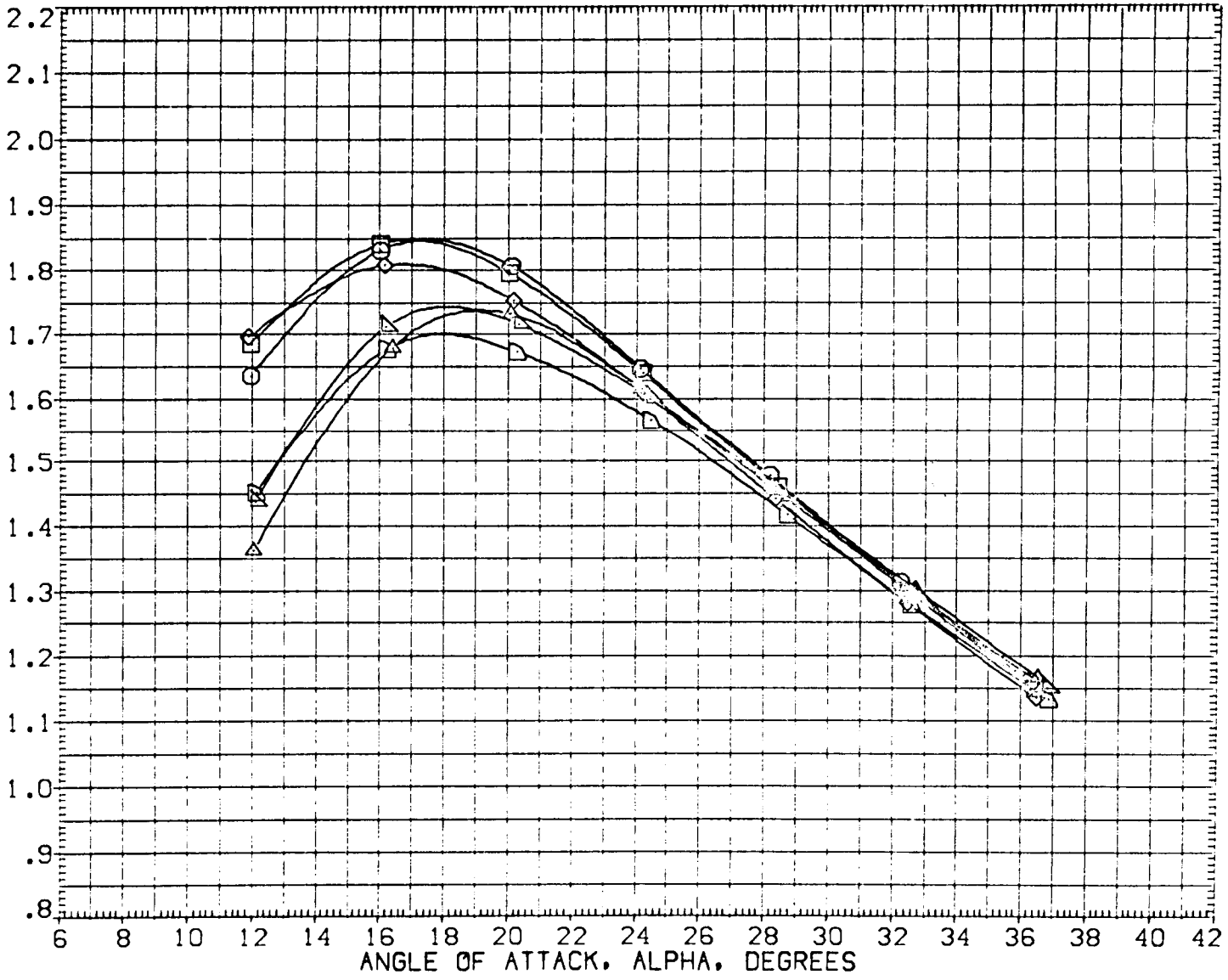


FIGURE 5. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

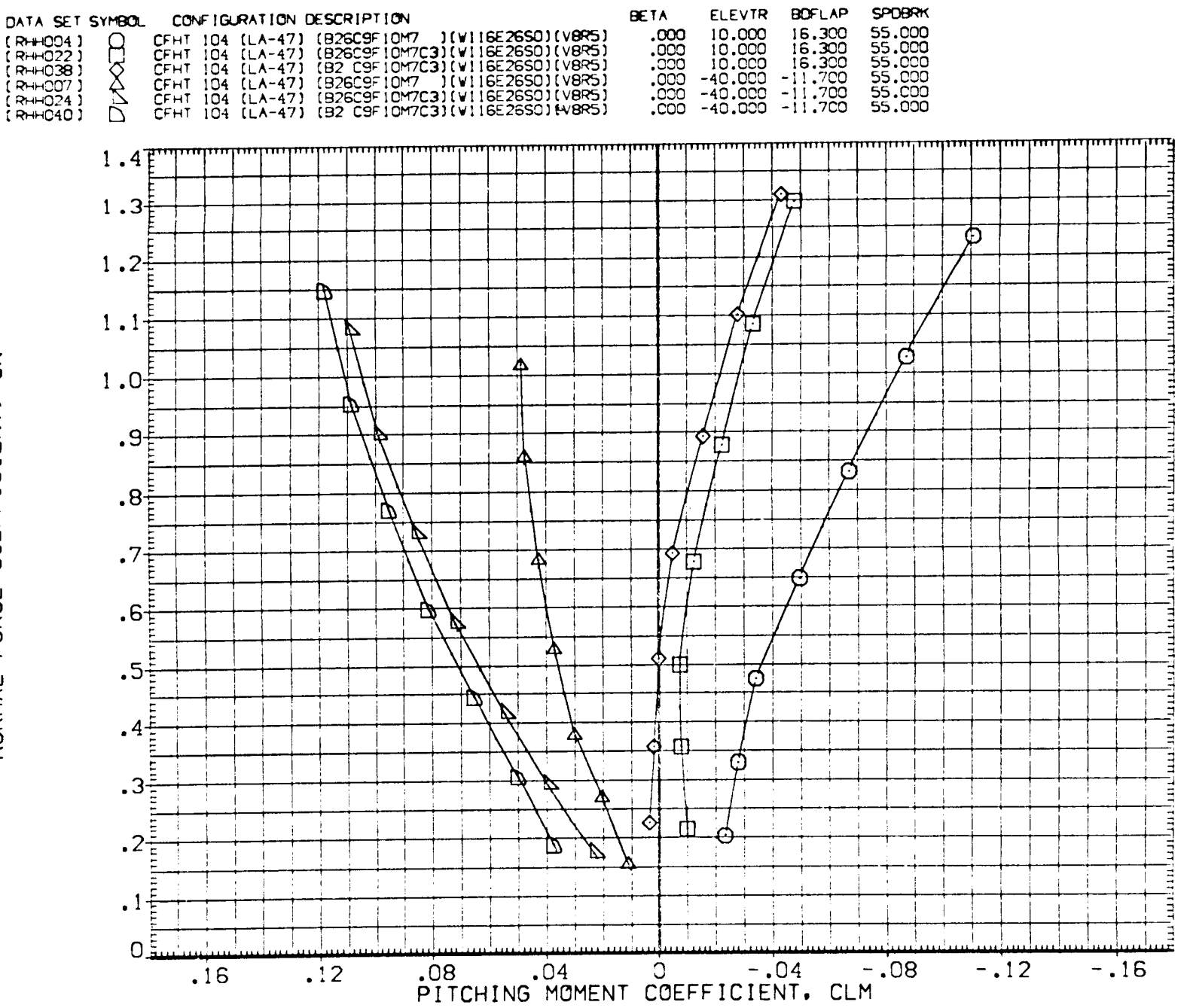


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH022)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH038)	◁	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH040)	△	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

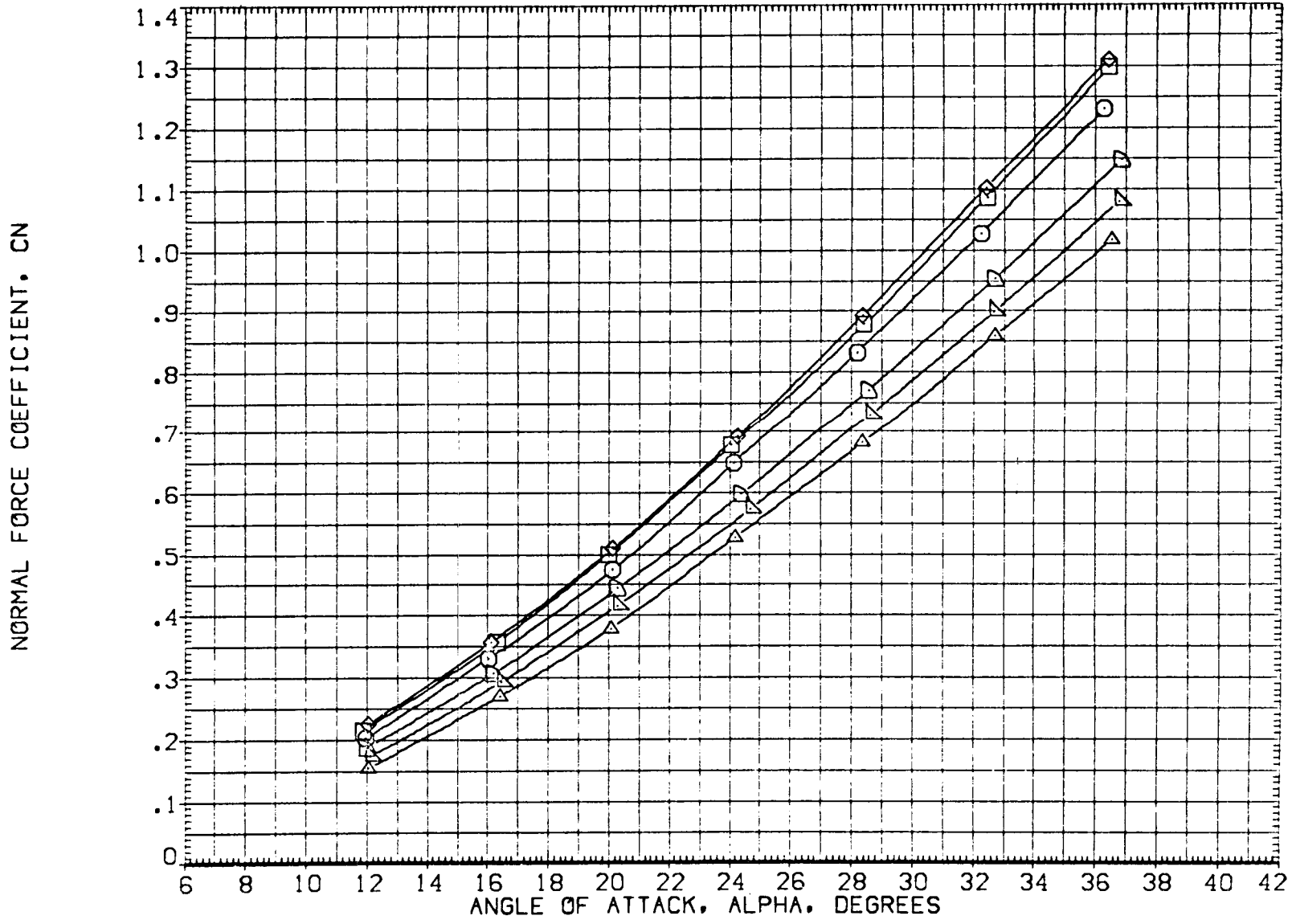


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(R##004)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R##022)		CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R##038)		CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R##007)		CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(R##024)		CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(R##040)		CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

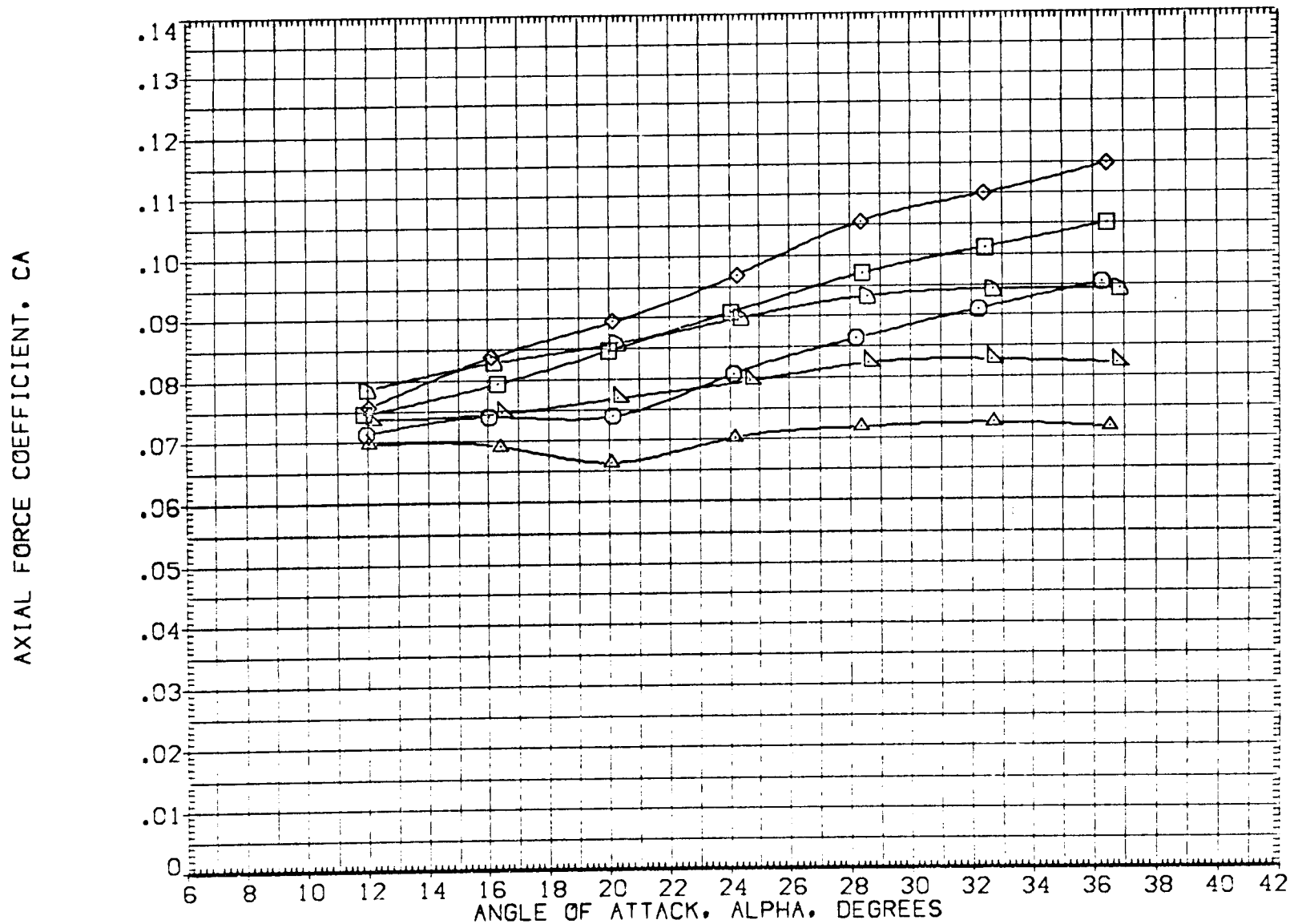


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

GA)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(R++004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R++022)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R++038)	△	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(R++007)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(R++024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(R++040)	△	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

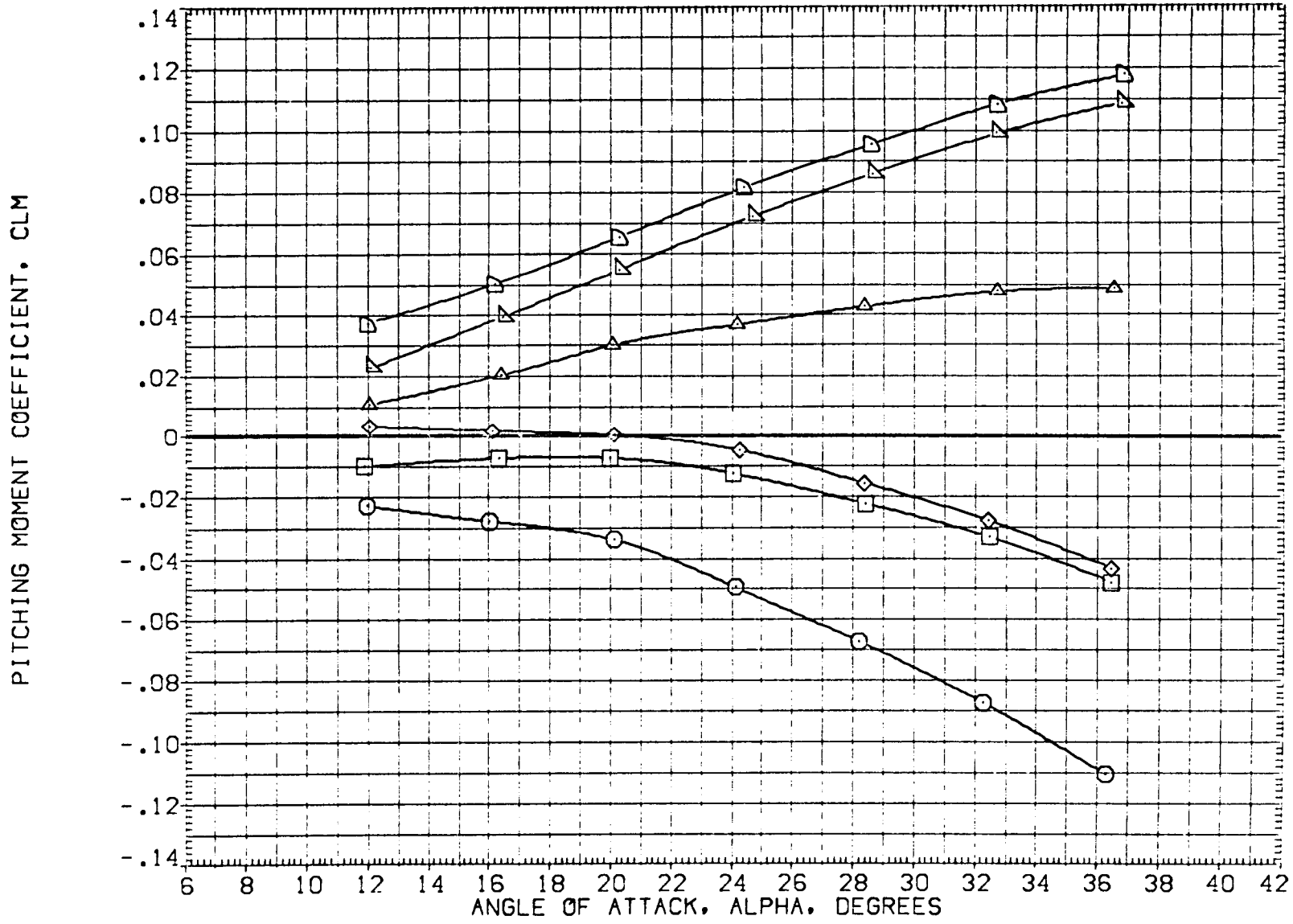


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

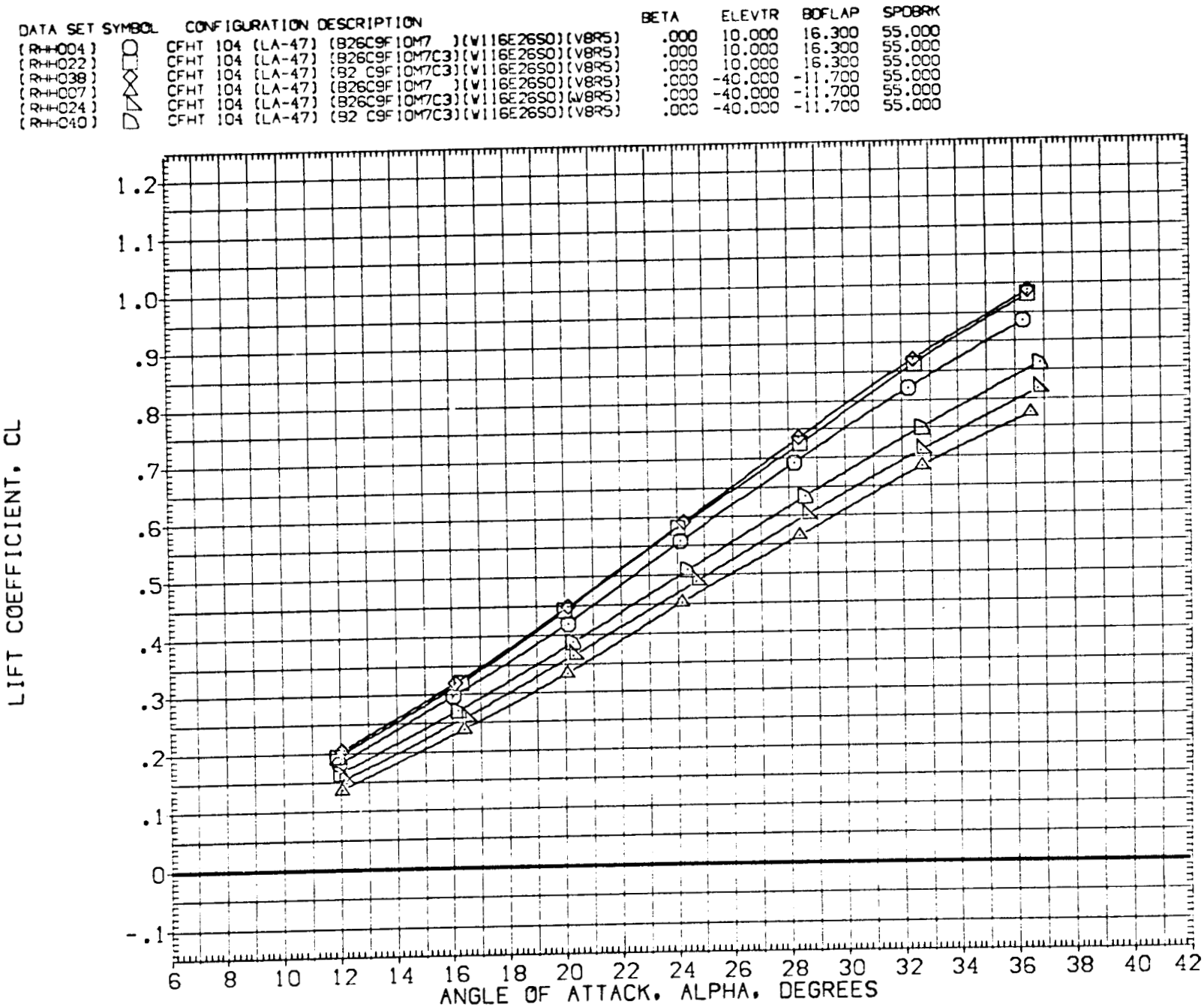


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH022)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH038)	◇	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(RHH024)	◺	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(RHH040)	▱	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

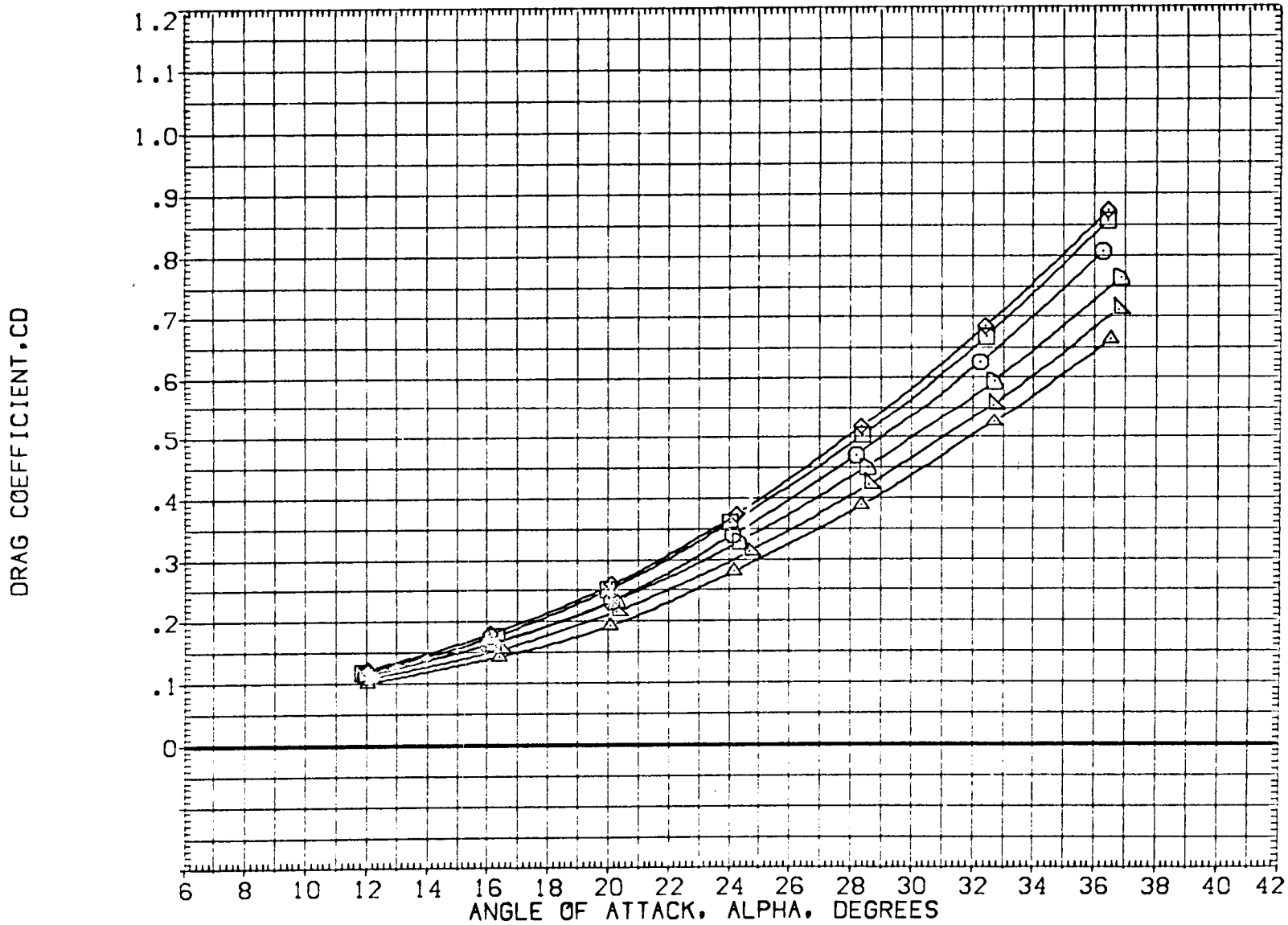


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH022)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH038)	◇	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH024)	▽	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH040)	◁	CFHT 104 (LA-47) (B2 C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

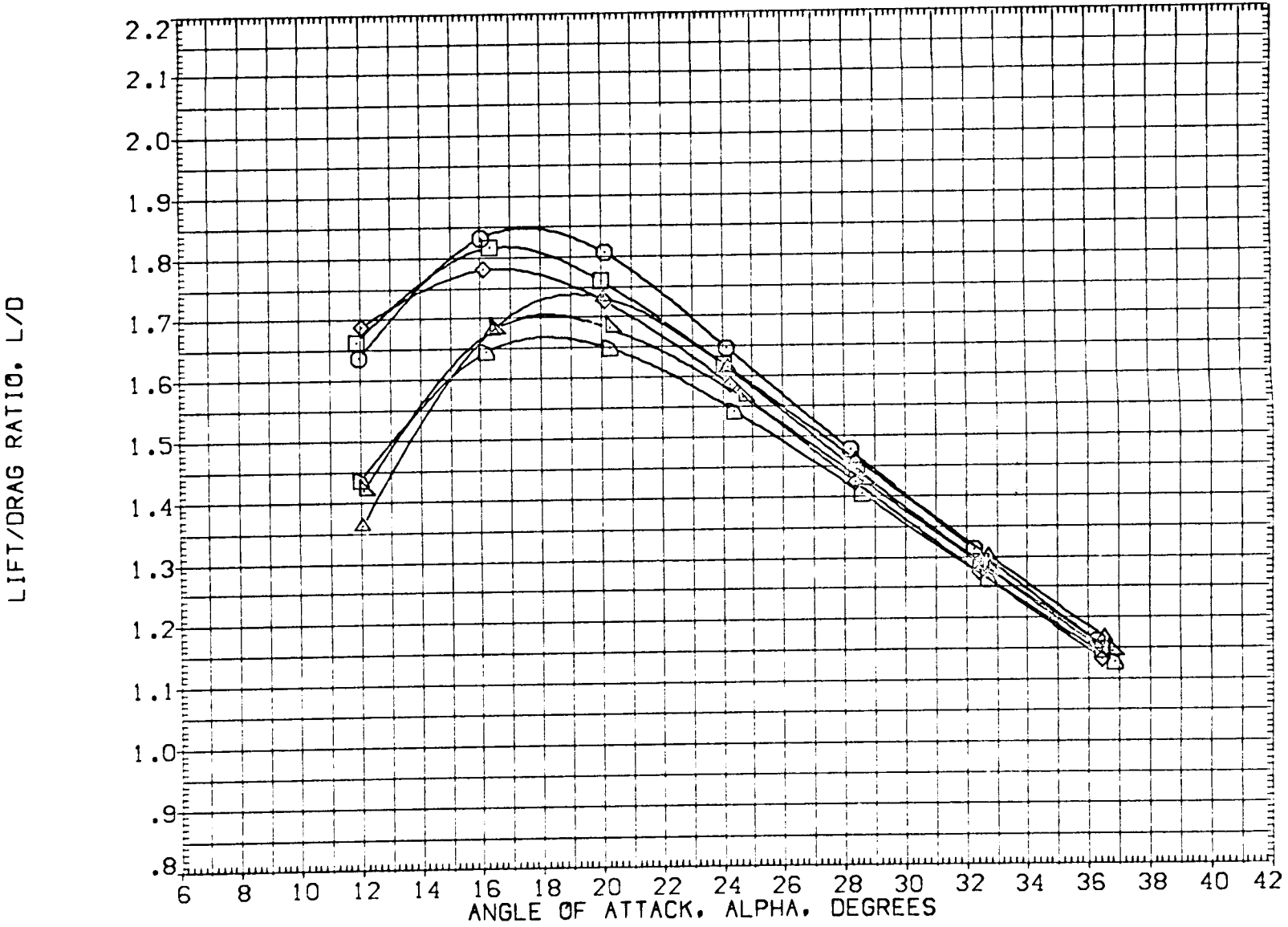


FIGURE 6. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LONG. AERO. CHARACT.

(A) MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000
(RHH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

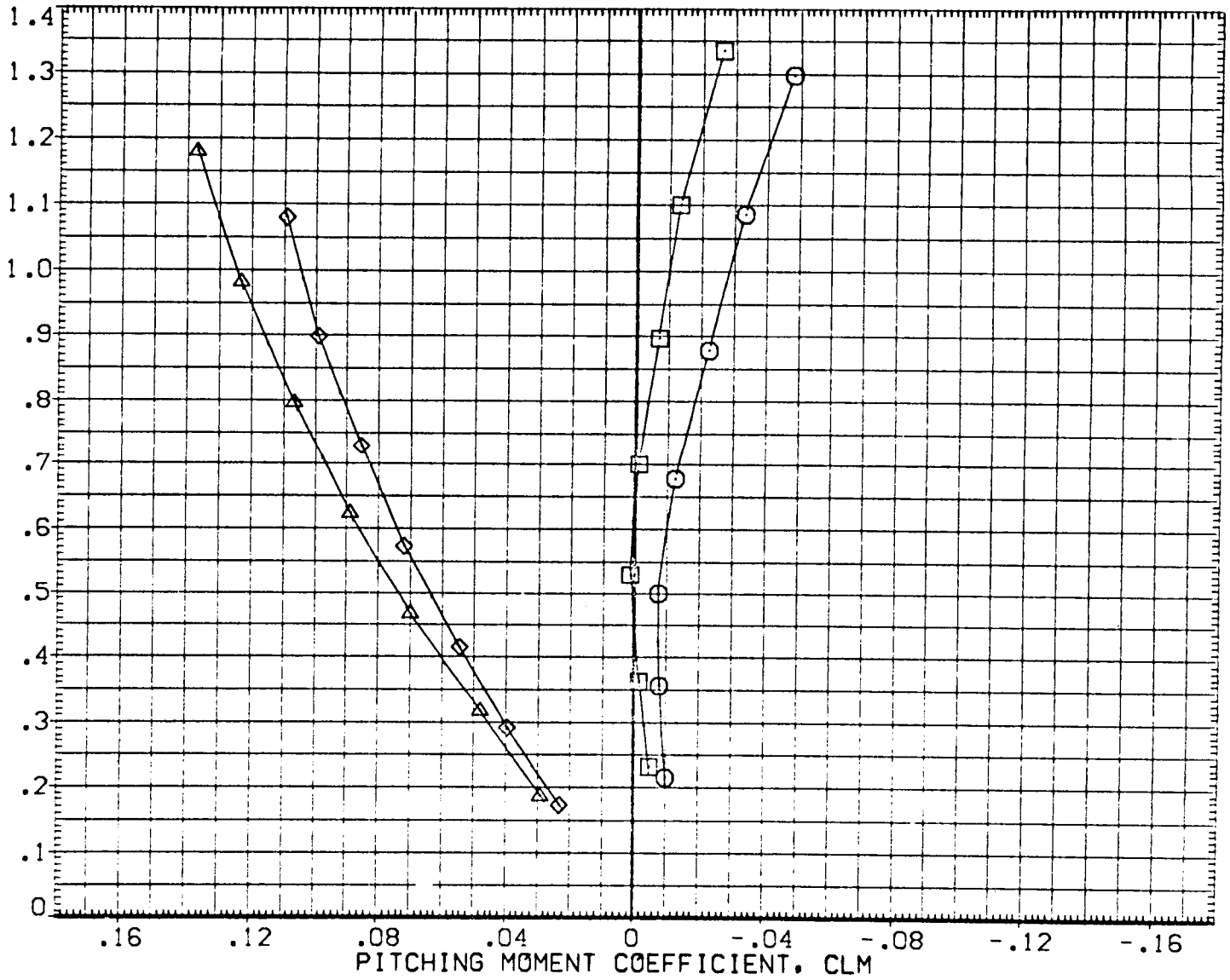


FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

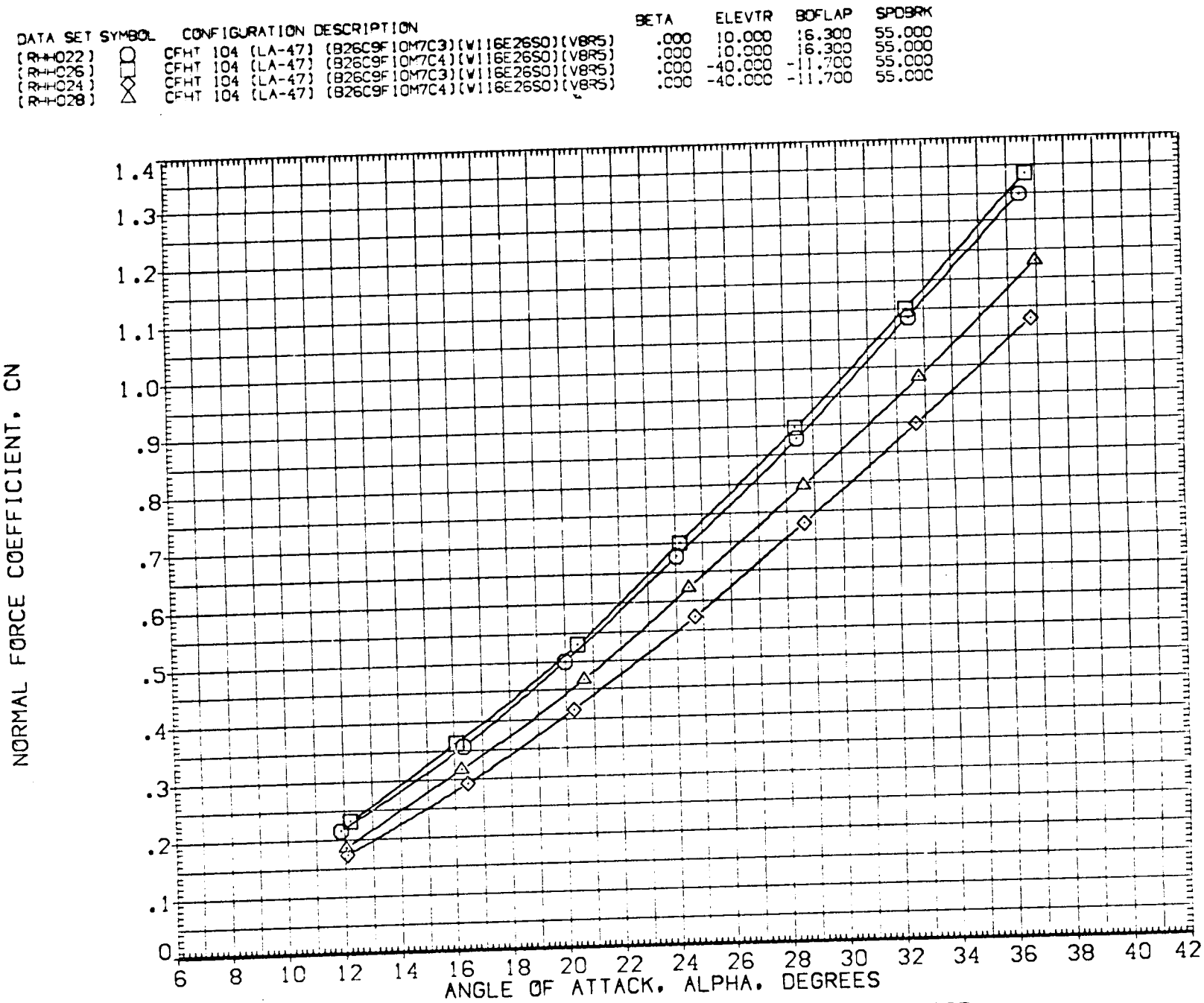


FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

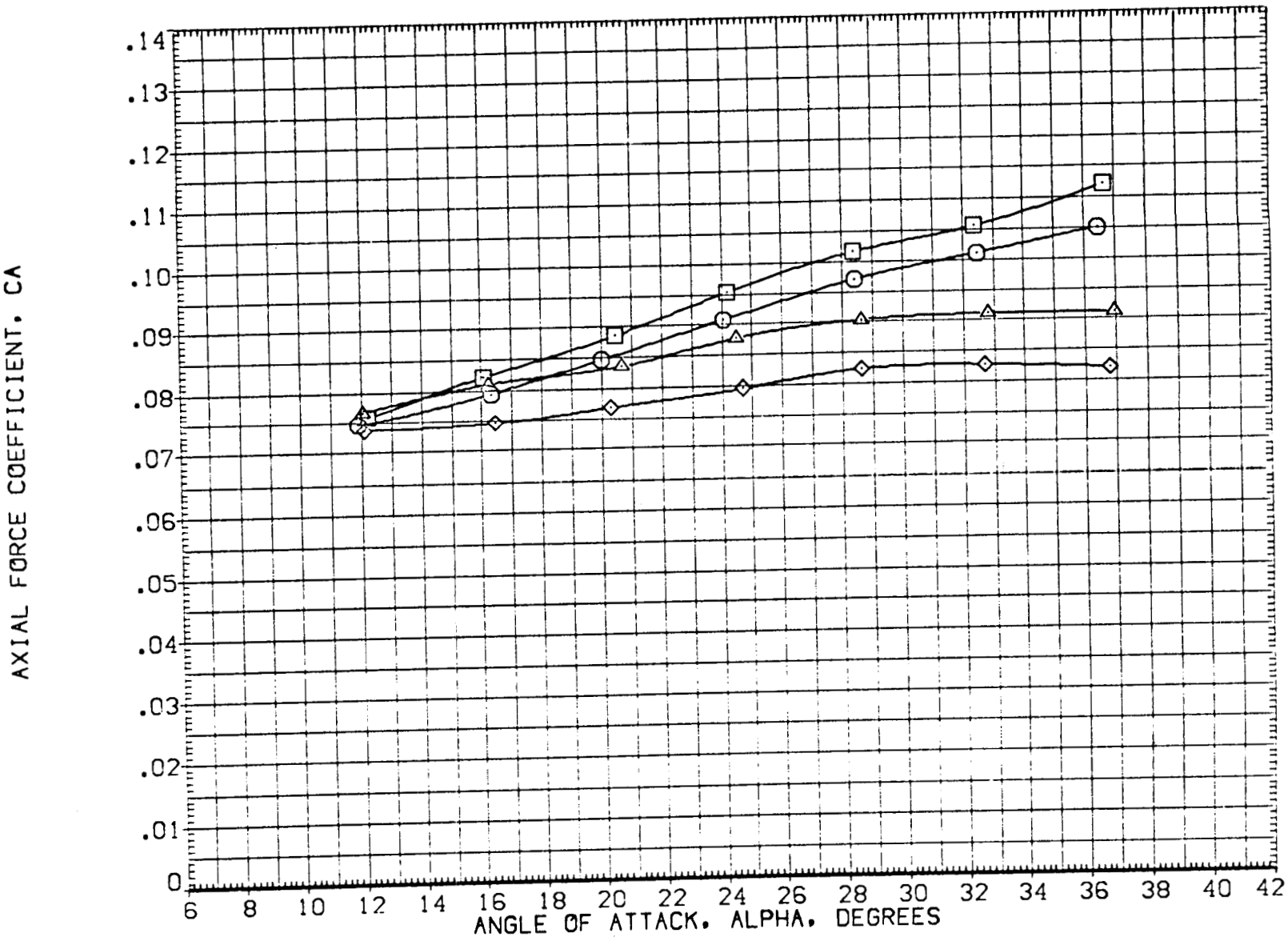


FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

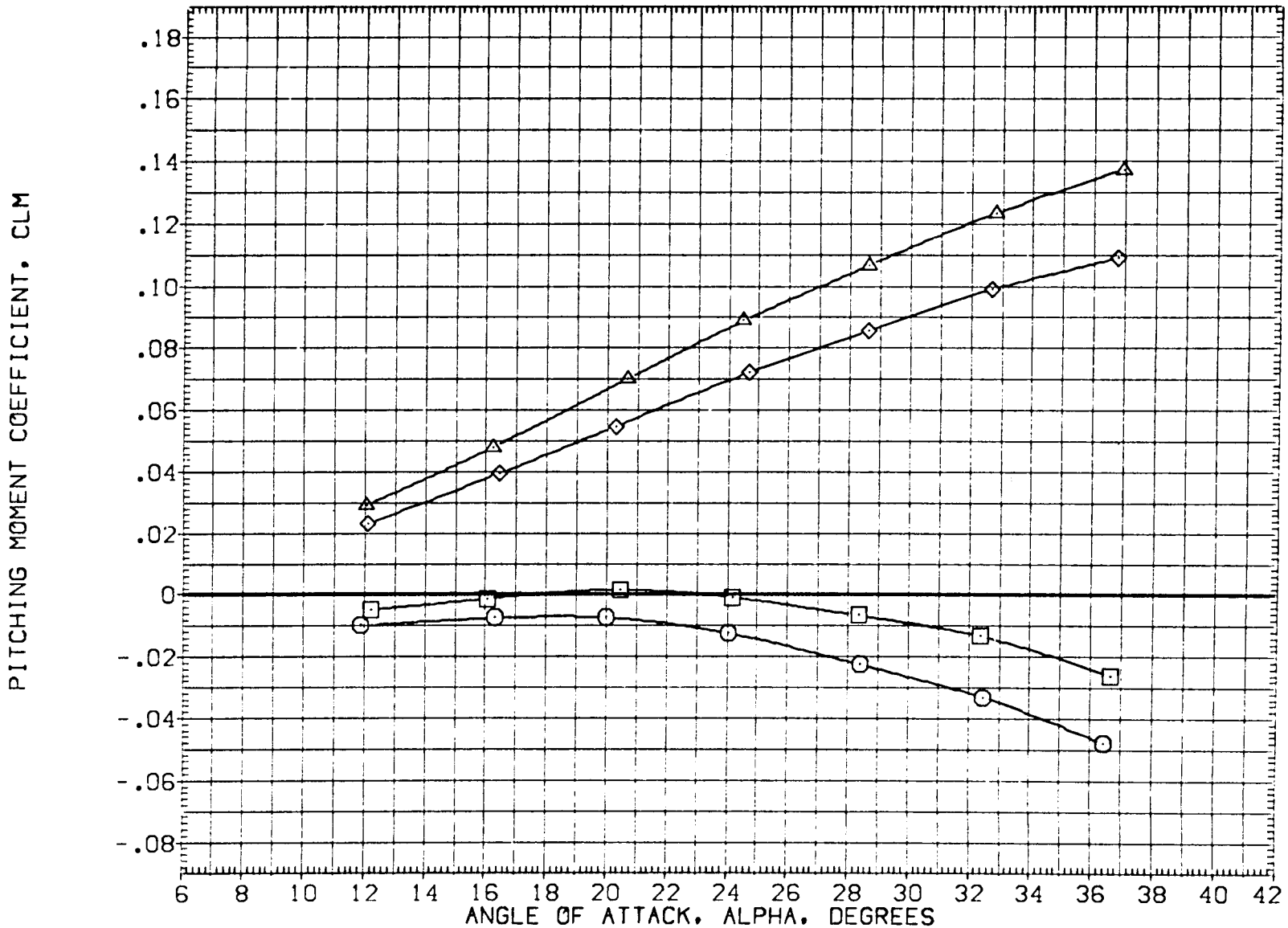


FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

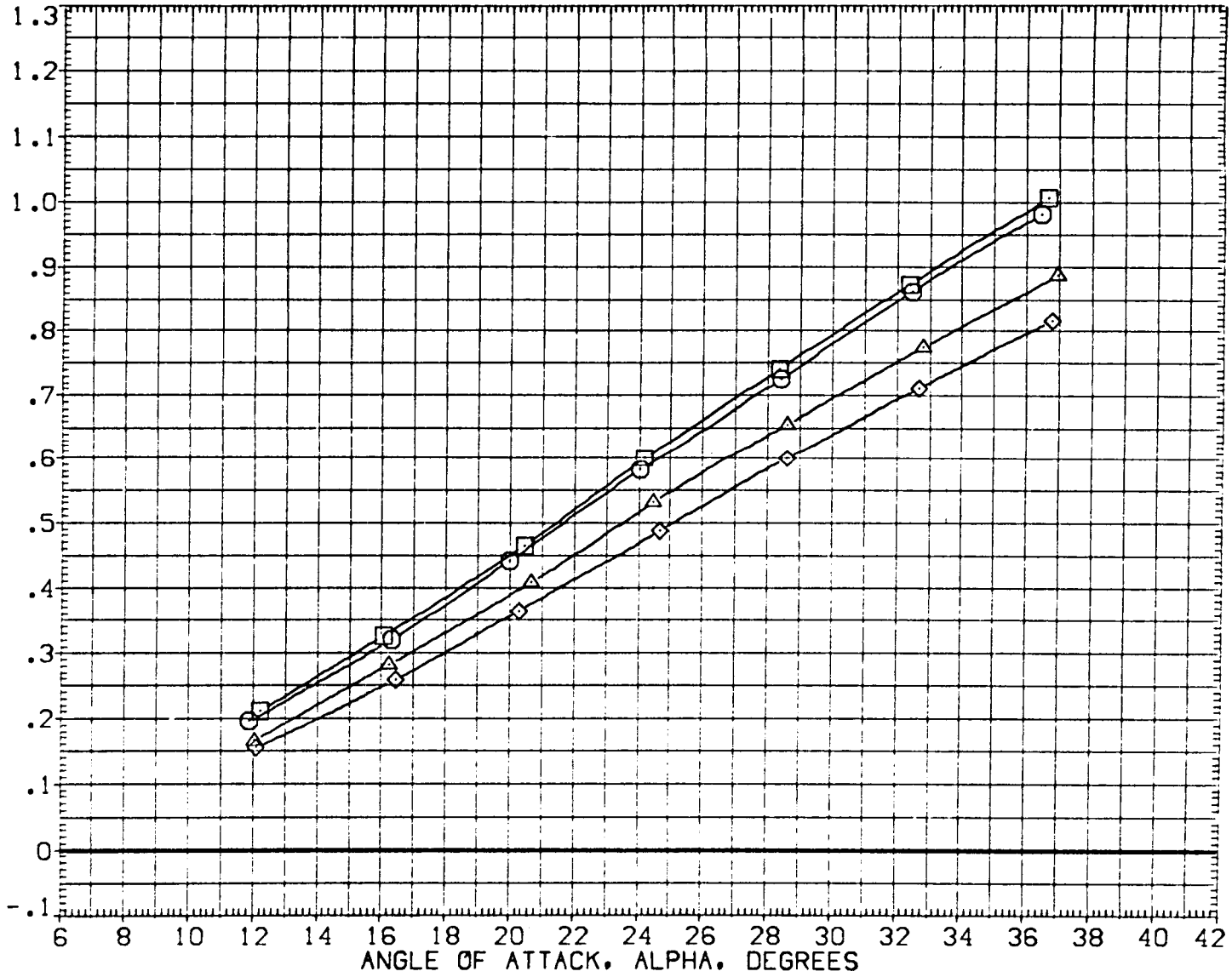


FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(R##022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(R##028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

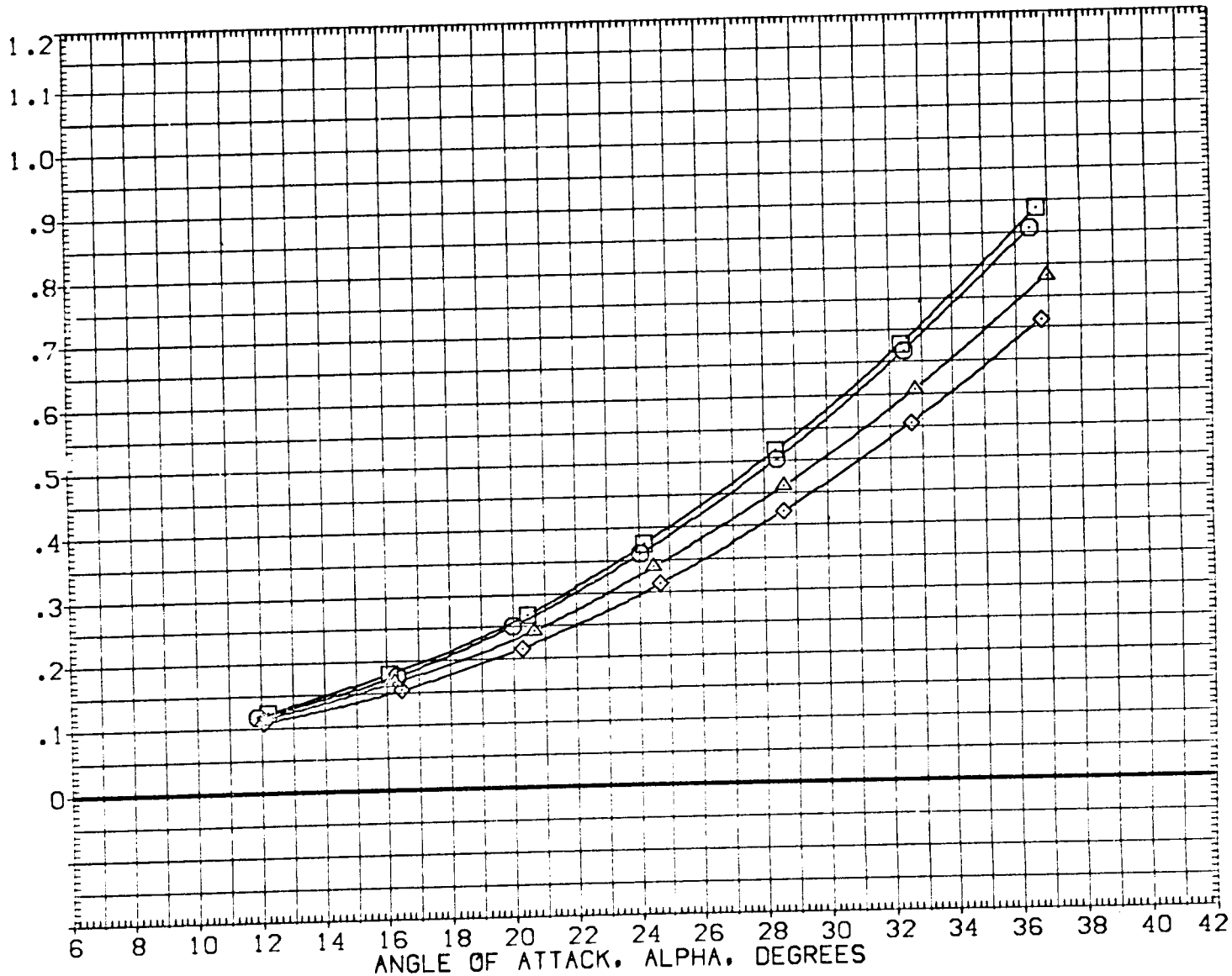


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FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W)16E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W)16E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W)16E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W)16E26S0)(V8R5)	.000	-40.000	-11.700	55.000

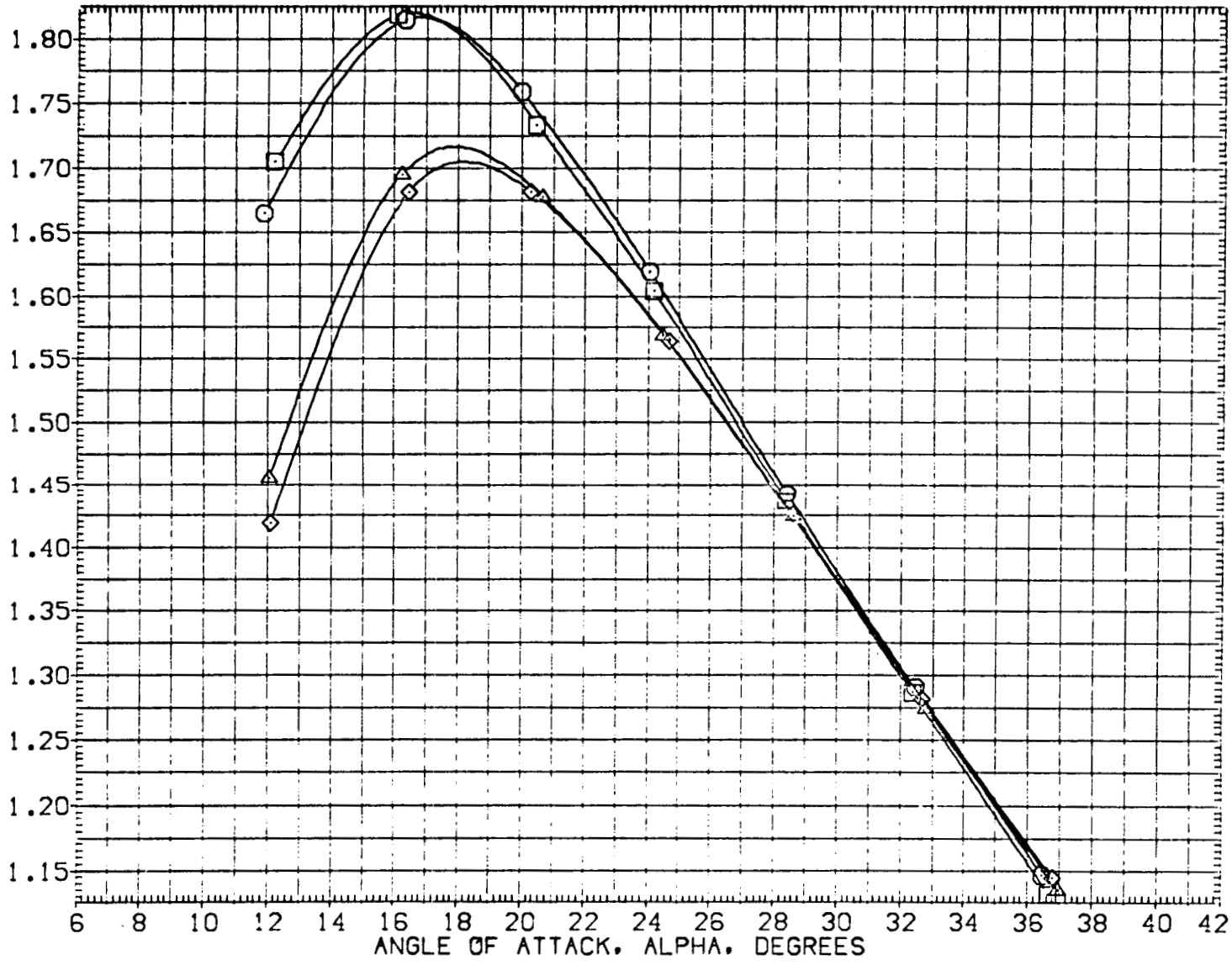

FIGURE 7. EFFECT OF CANARD CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(R##004)	○	CFHT 104 (LA-47) (826C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##017)	□	CFHT 104 (LA-47) (826C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(R##012)	◇	CFHT 104 (LA-47) (826C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##007)	△	CFHT 104 (LA-47) (826C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(R##019)	▷	CFHT 104 (LA-47) (826C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(R##015)	▽	CFHT 104 (LA-47) (826C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

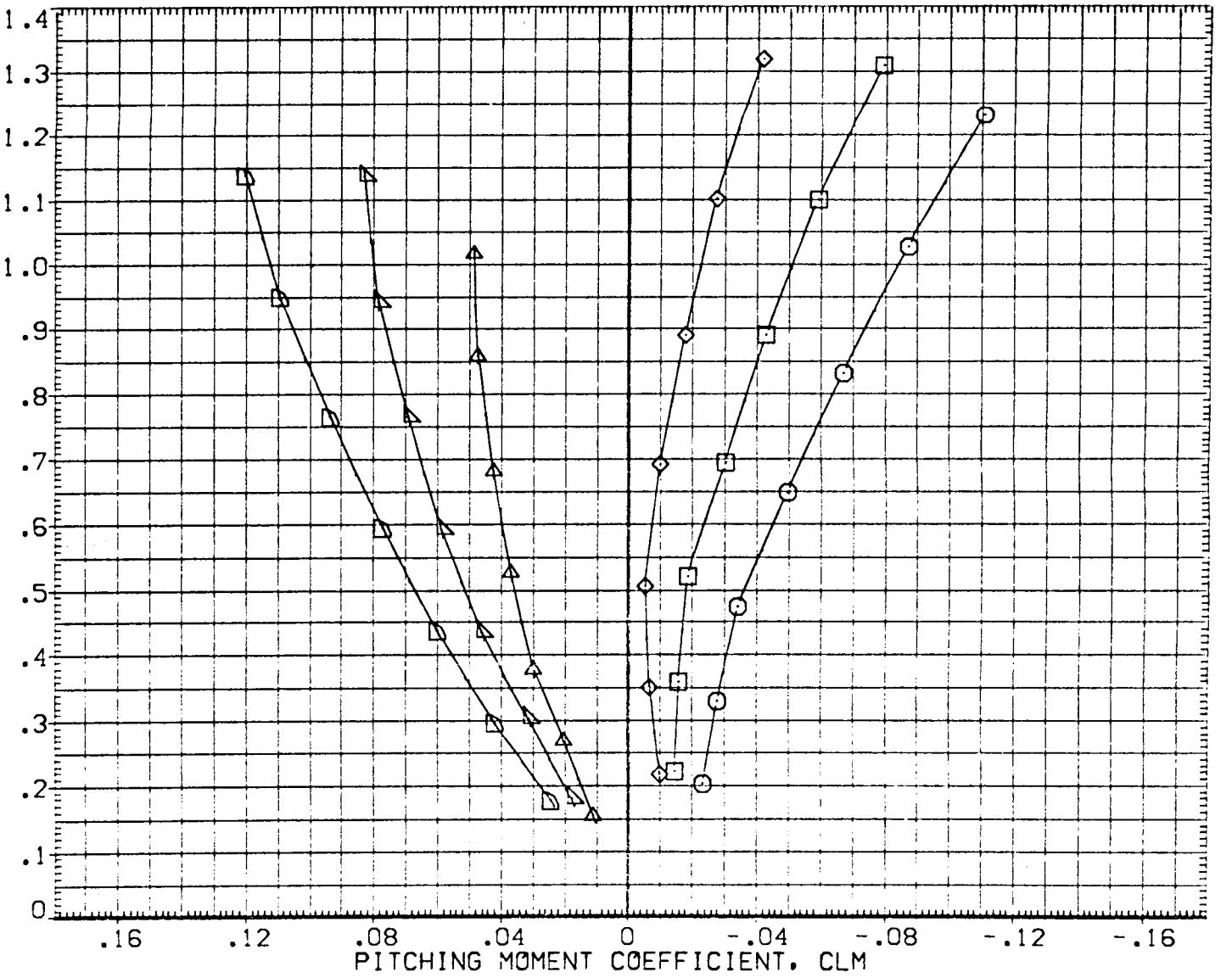

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH017)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(RHH012)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH019)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(RHH015)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

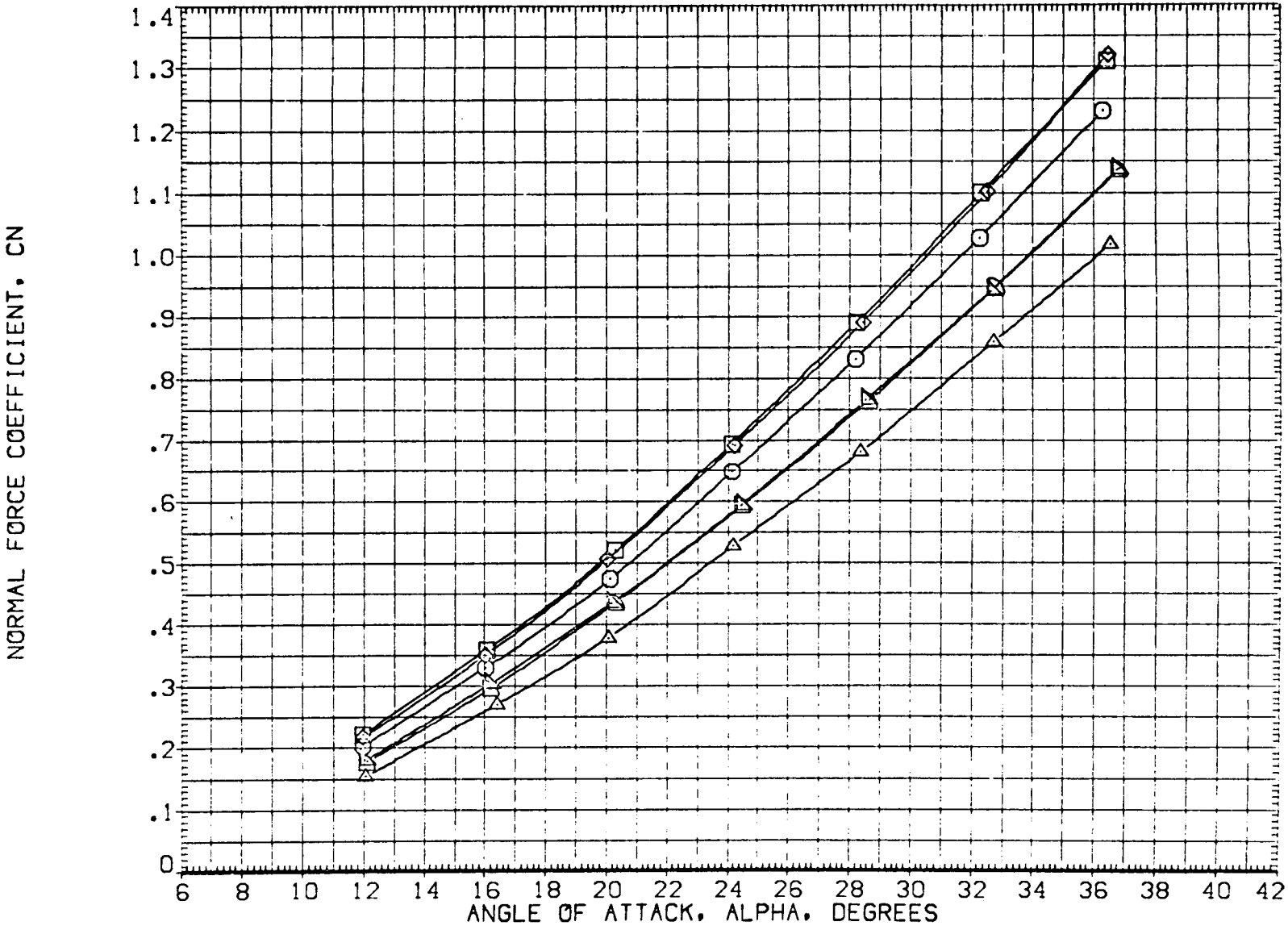

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(R##004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##017)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(R##012)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##C07)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(R##019)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(R##015)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

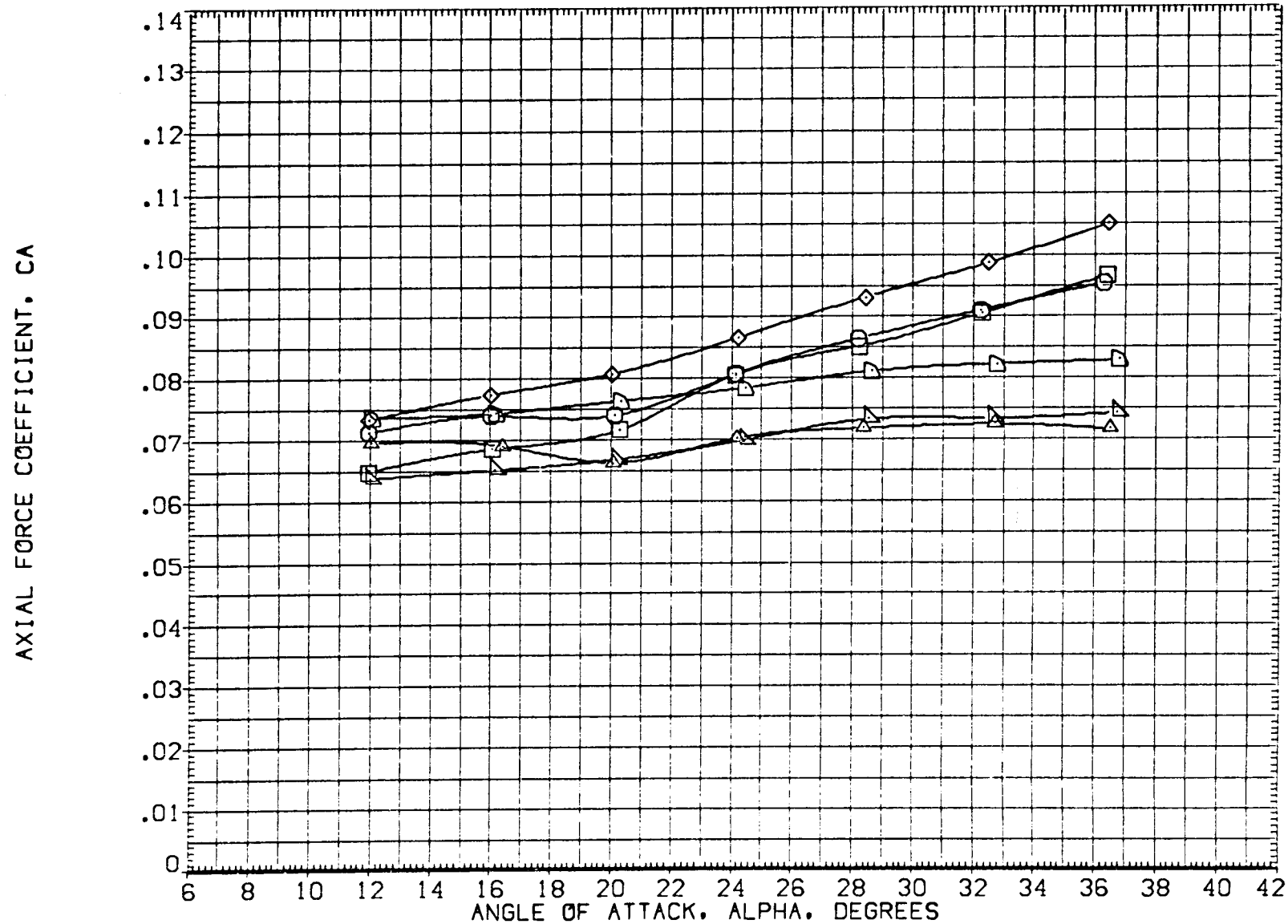

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH017)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(RHH012)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH019)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(RHH015)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

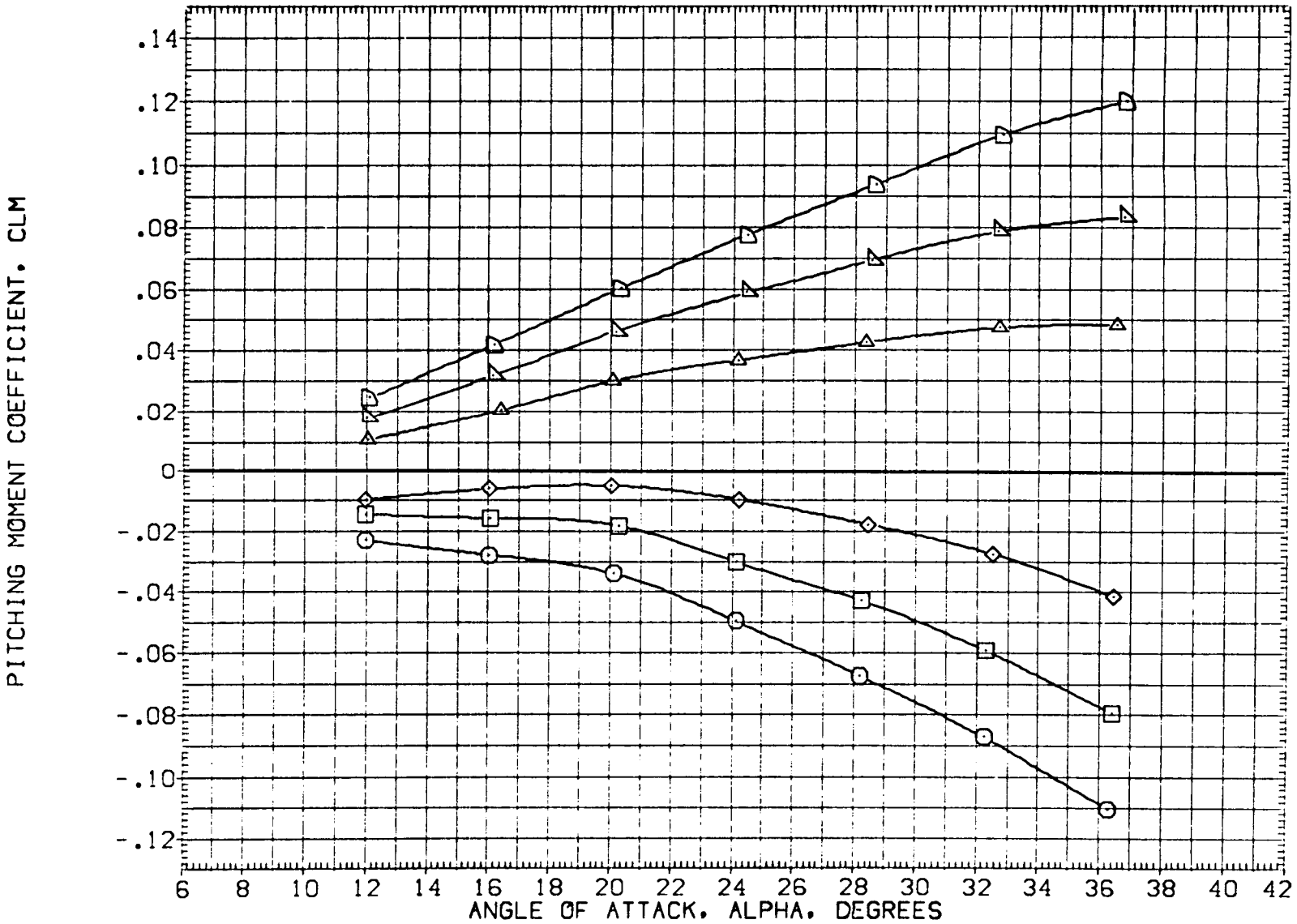

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH017)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(RH012)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RH007)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RH019)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(RH015)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

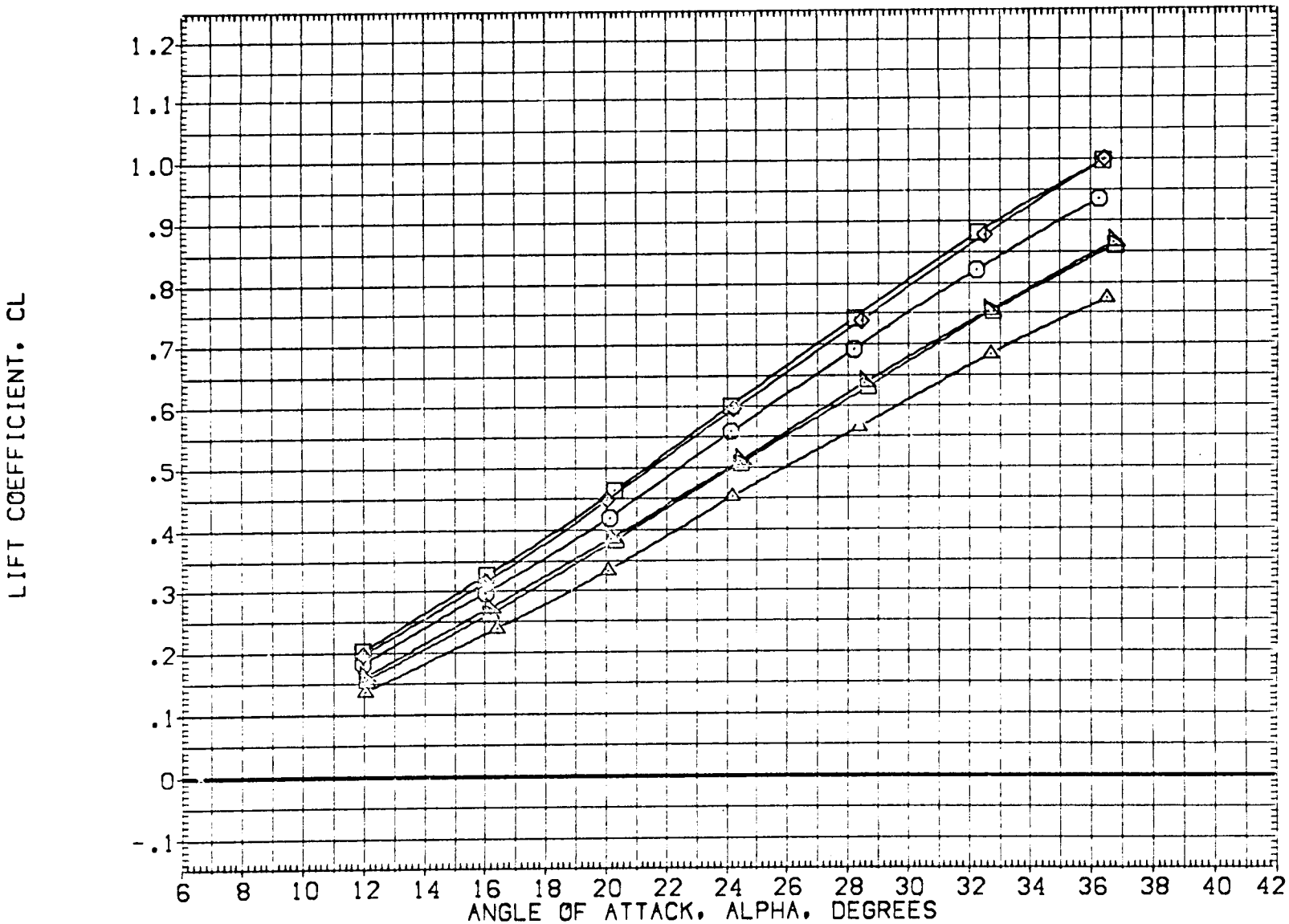

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(R++004)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R++017)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(R++012)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R++C07)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(R++019)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(R++015)	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

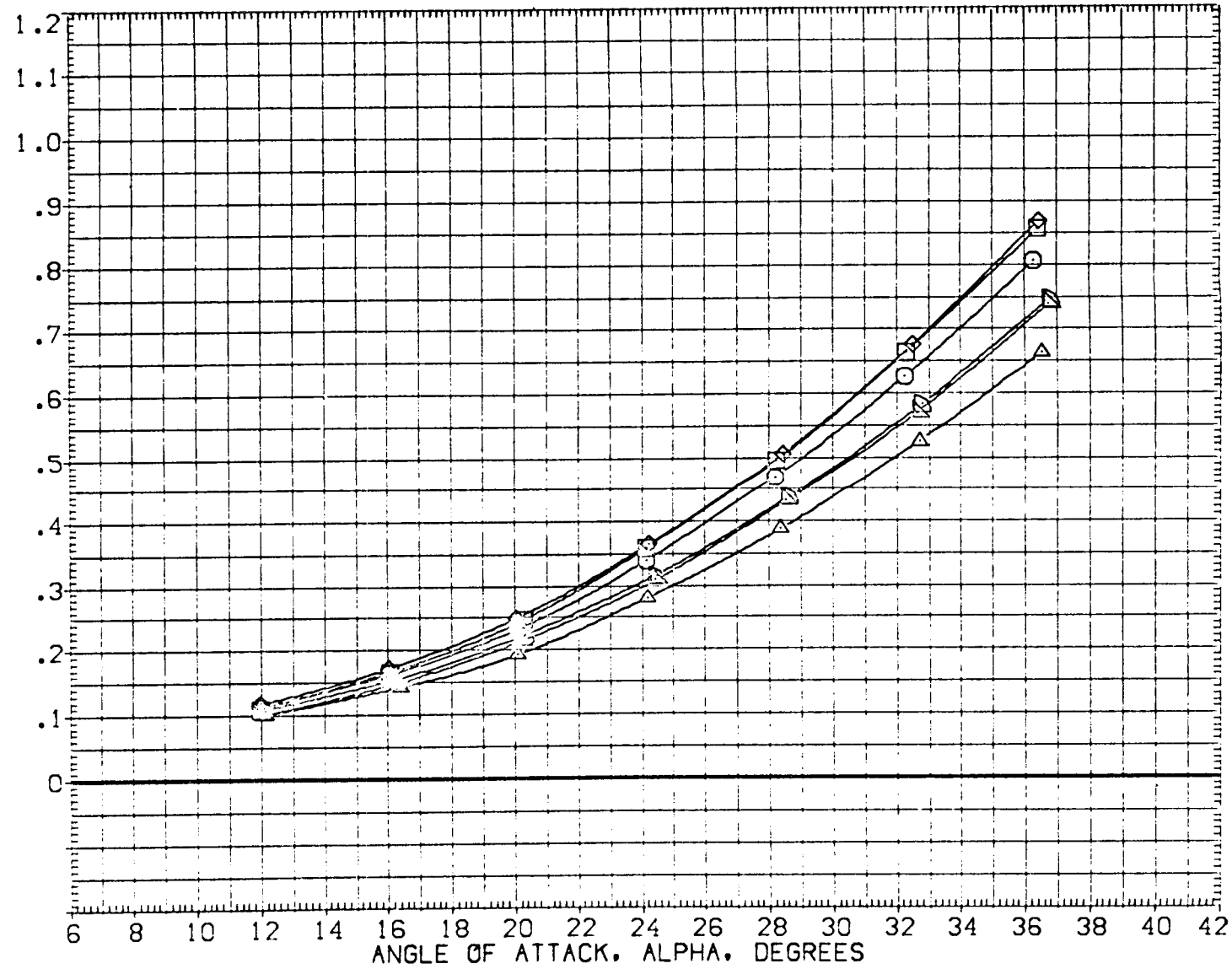

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH017)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	10.000	16.300	55.000
(RHH012)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000
(RHH019)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S1)(V8R5)	.000	-40.000	-11.700	55.000
(RHH015)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

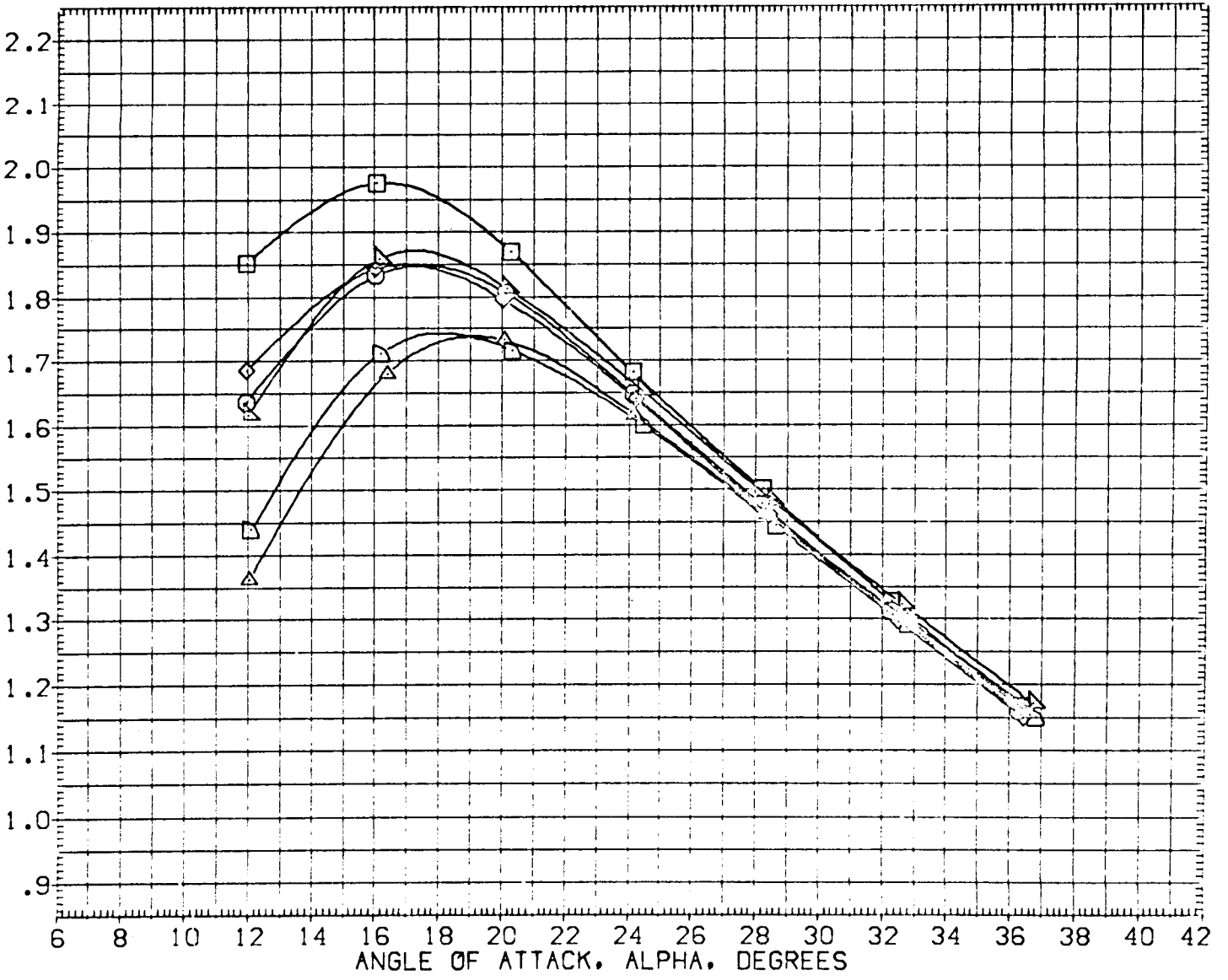

FIGURE 8. EFFECT OF WING FILLET CONFIGURATION ON LONG. AERO. CHARACT.

(A)MACH = 10.33

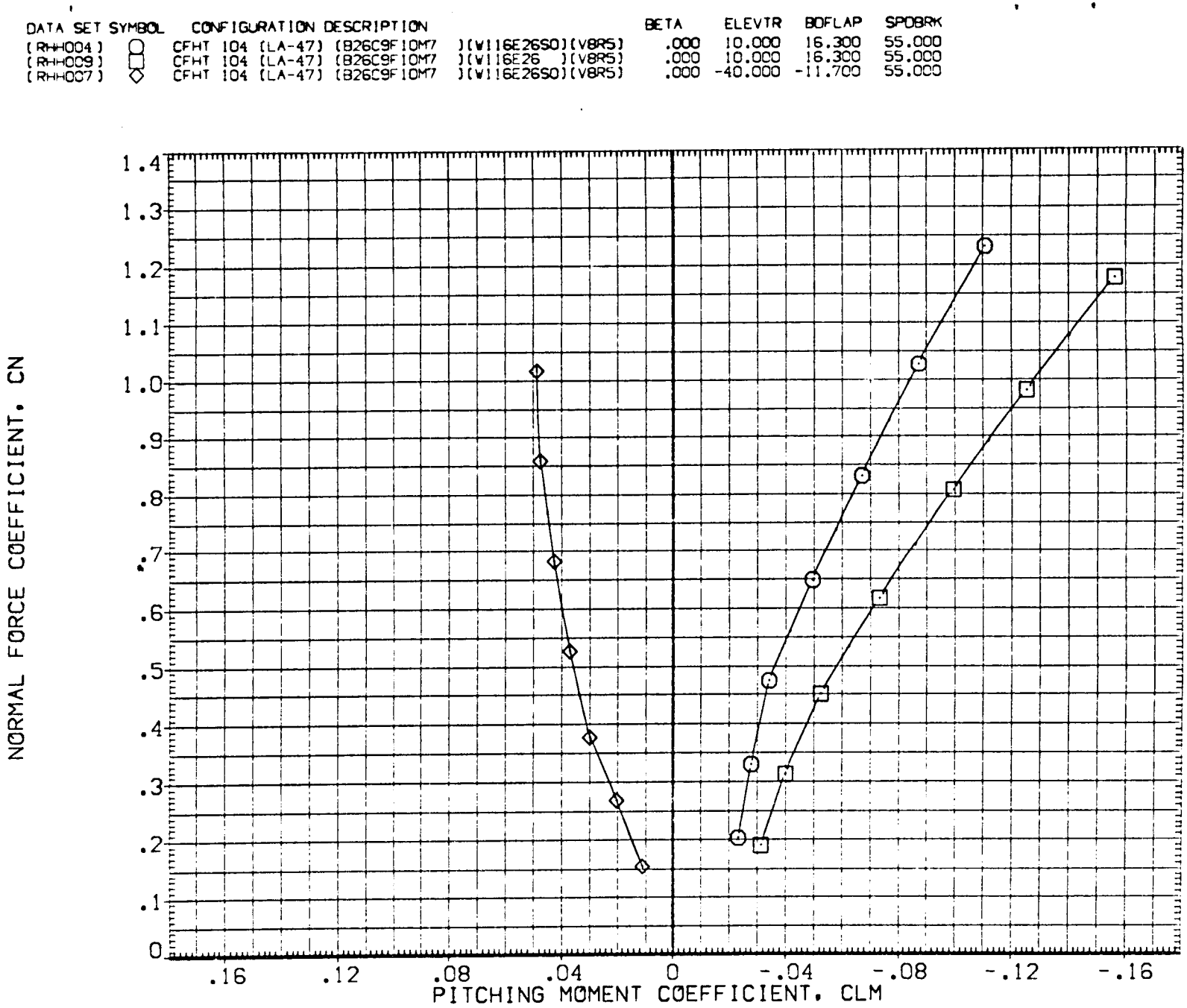

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH009)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

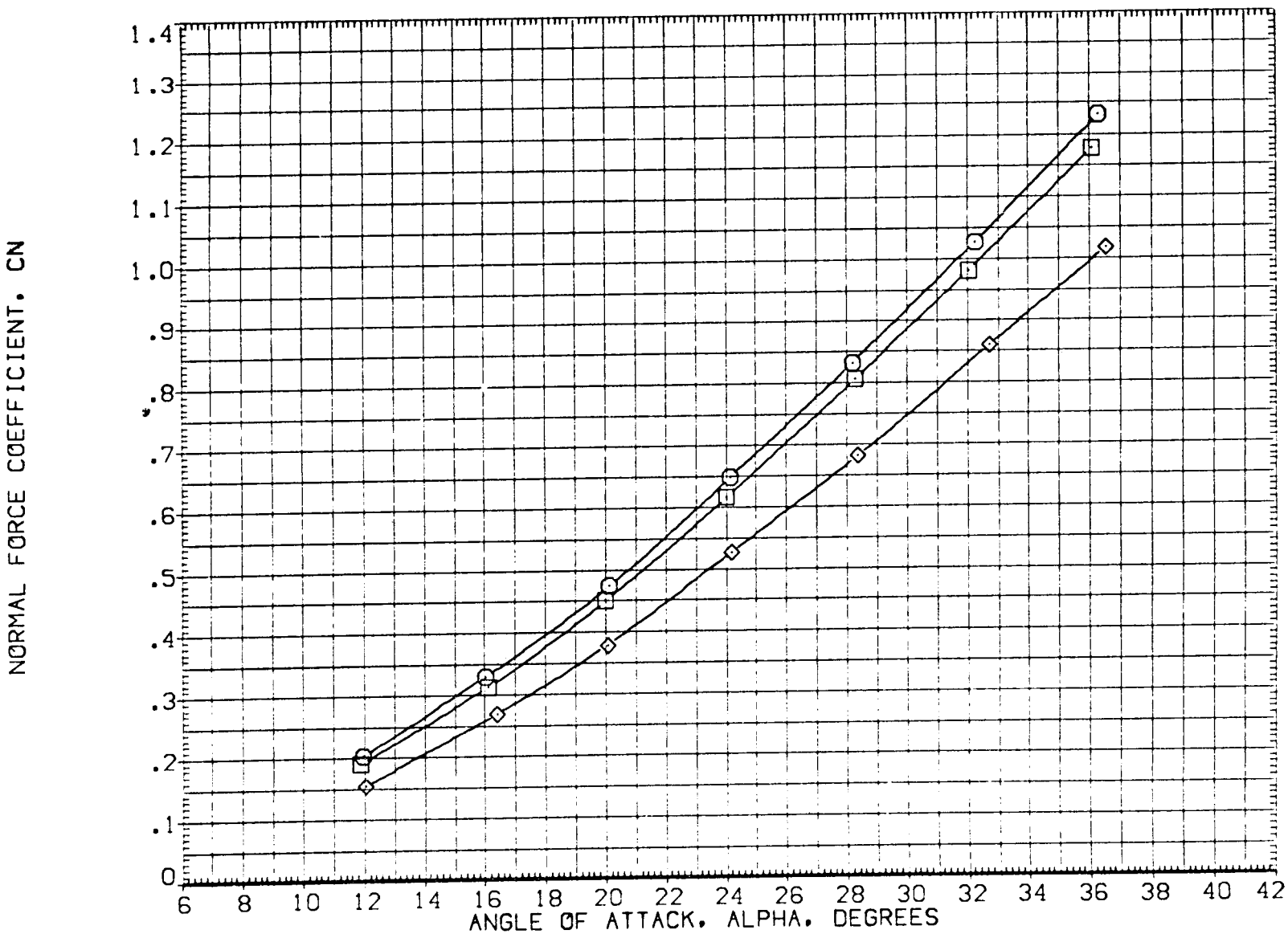

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RH#004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RH#009)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	.000	10.000	16.300	55.000
(RH#007)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

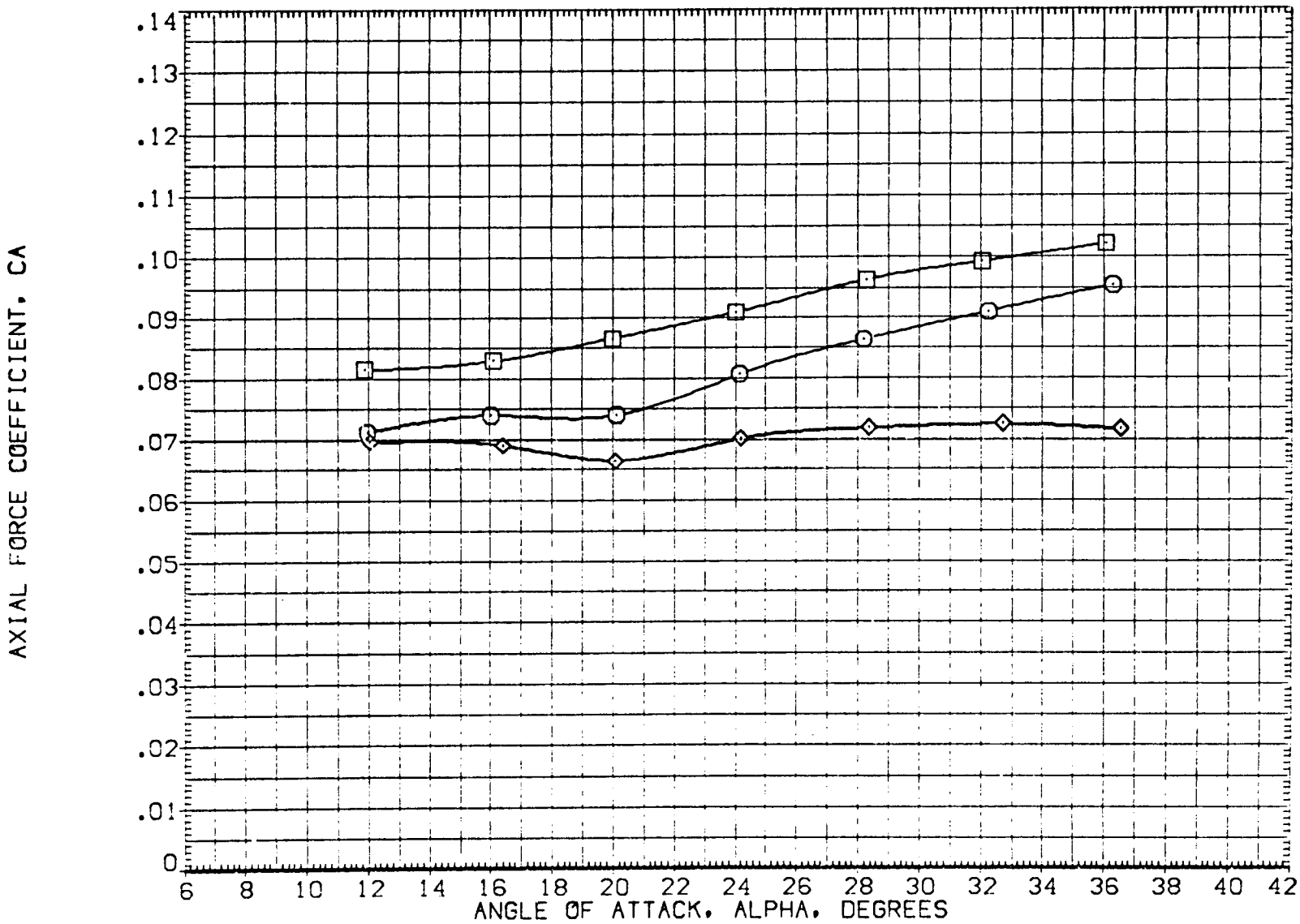

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH009)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	.000	10.000	16.300	55.000
(RHH007)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

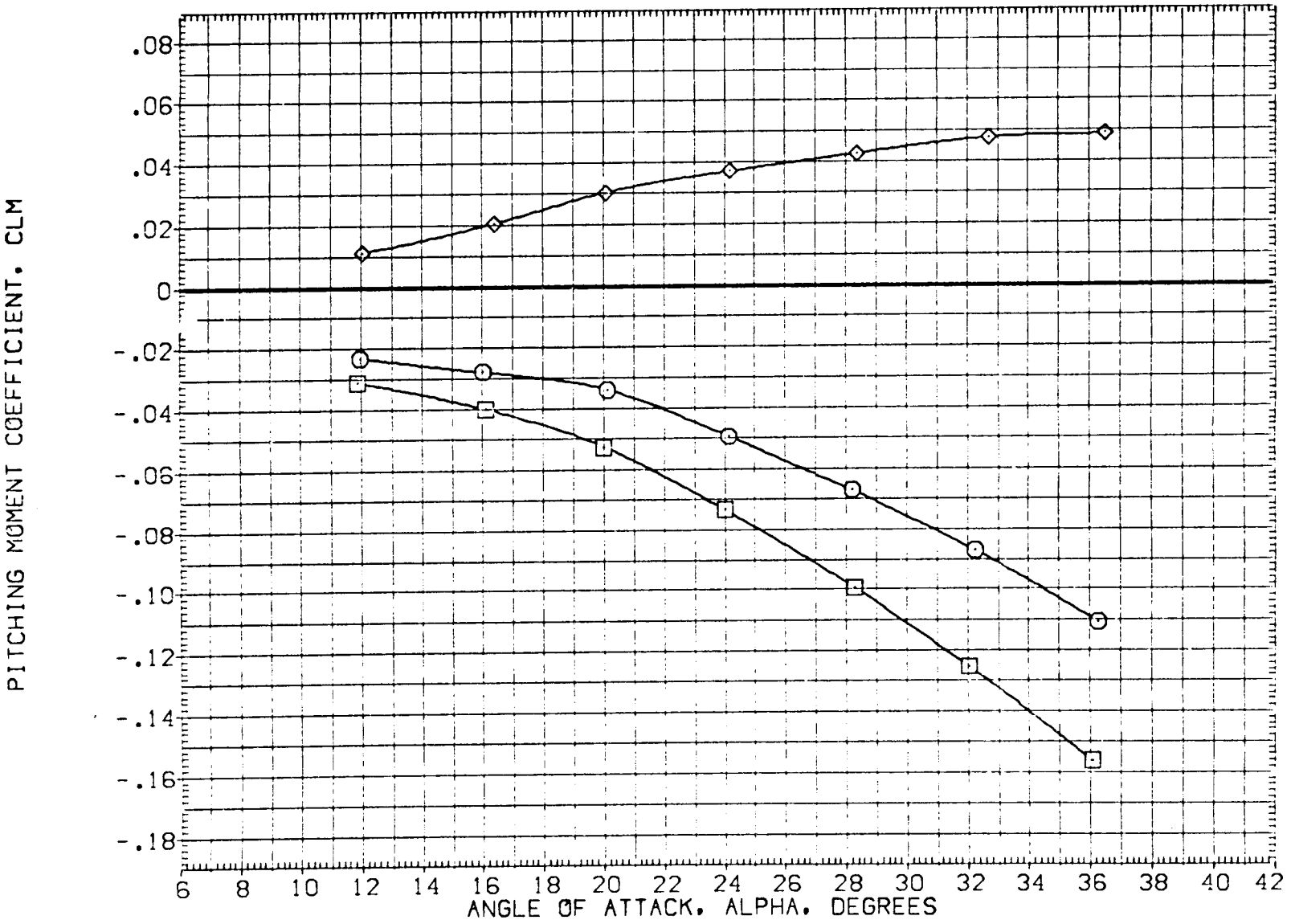

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RH-004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RH-009)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	.000	10.000	16.300	55.000
(RH-007)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

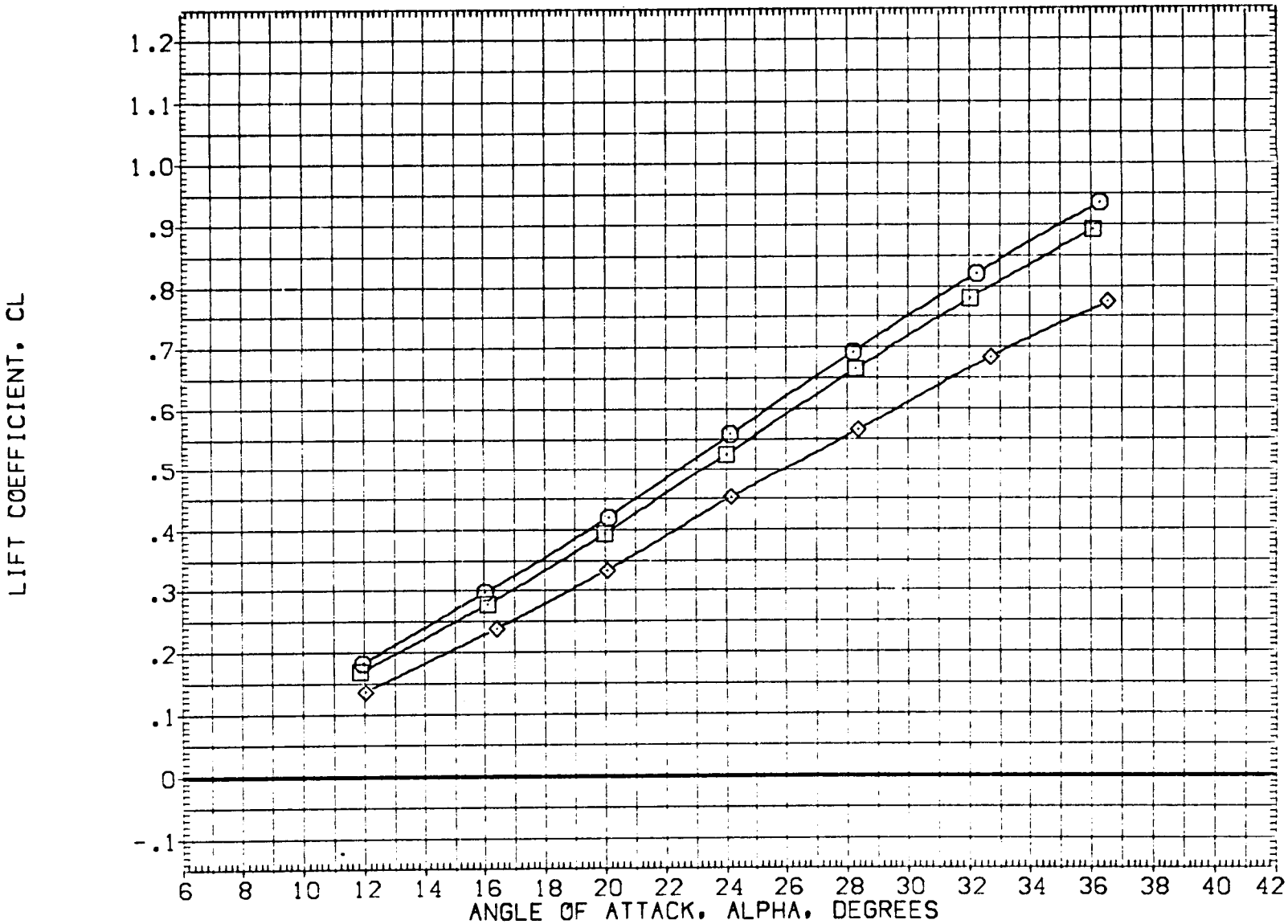

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

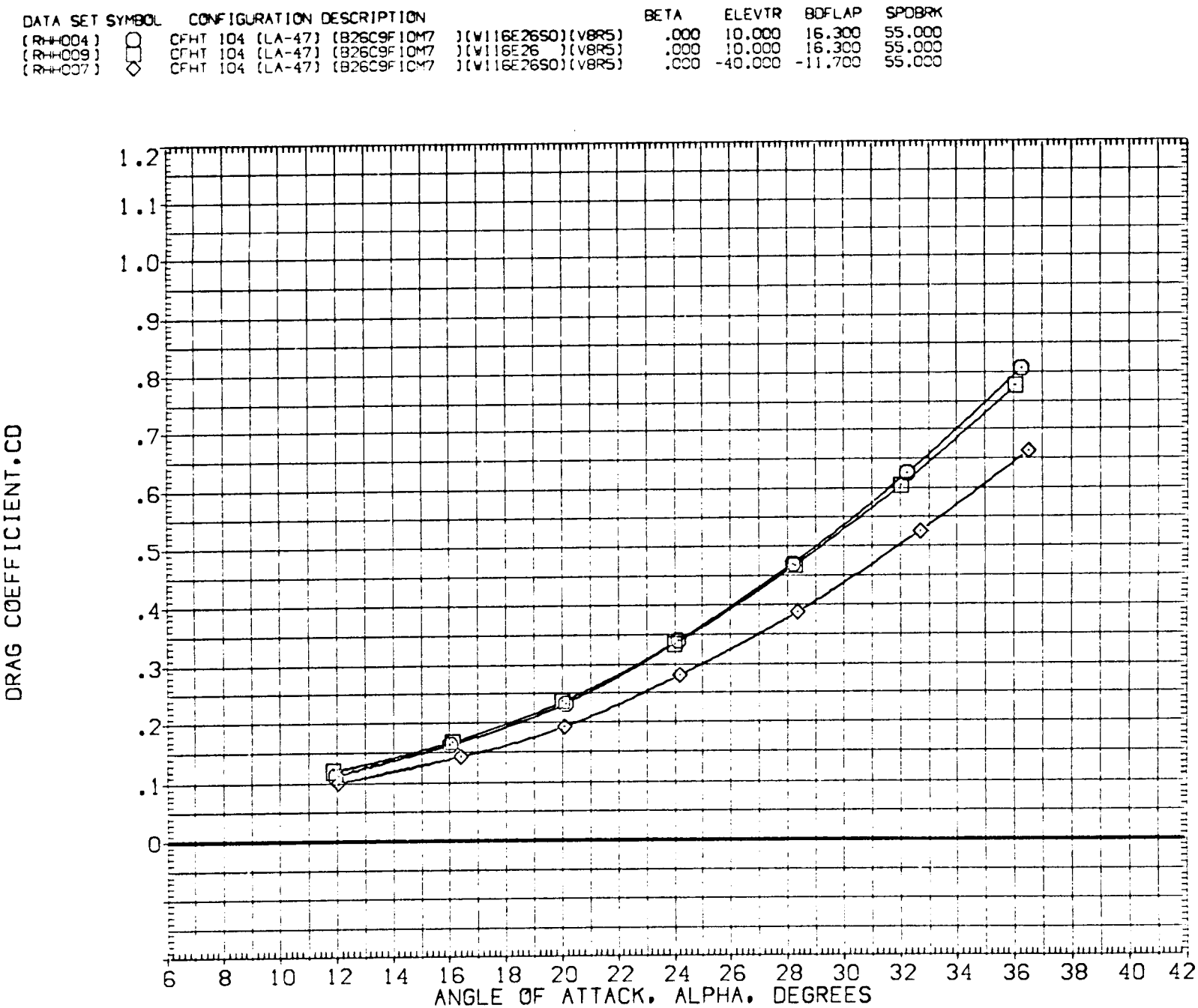

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004) ○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	10.000	16.300	55.000
(RHH009) □	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	.000	10.000	16.300	55.000
(RHH007) ◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	.000	-40.000	-11.700	55.000

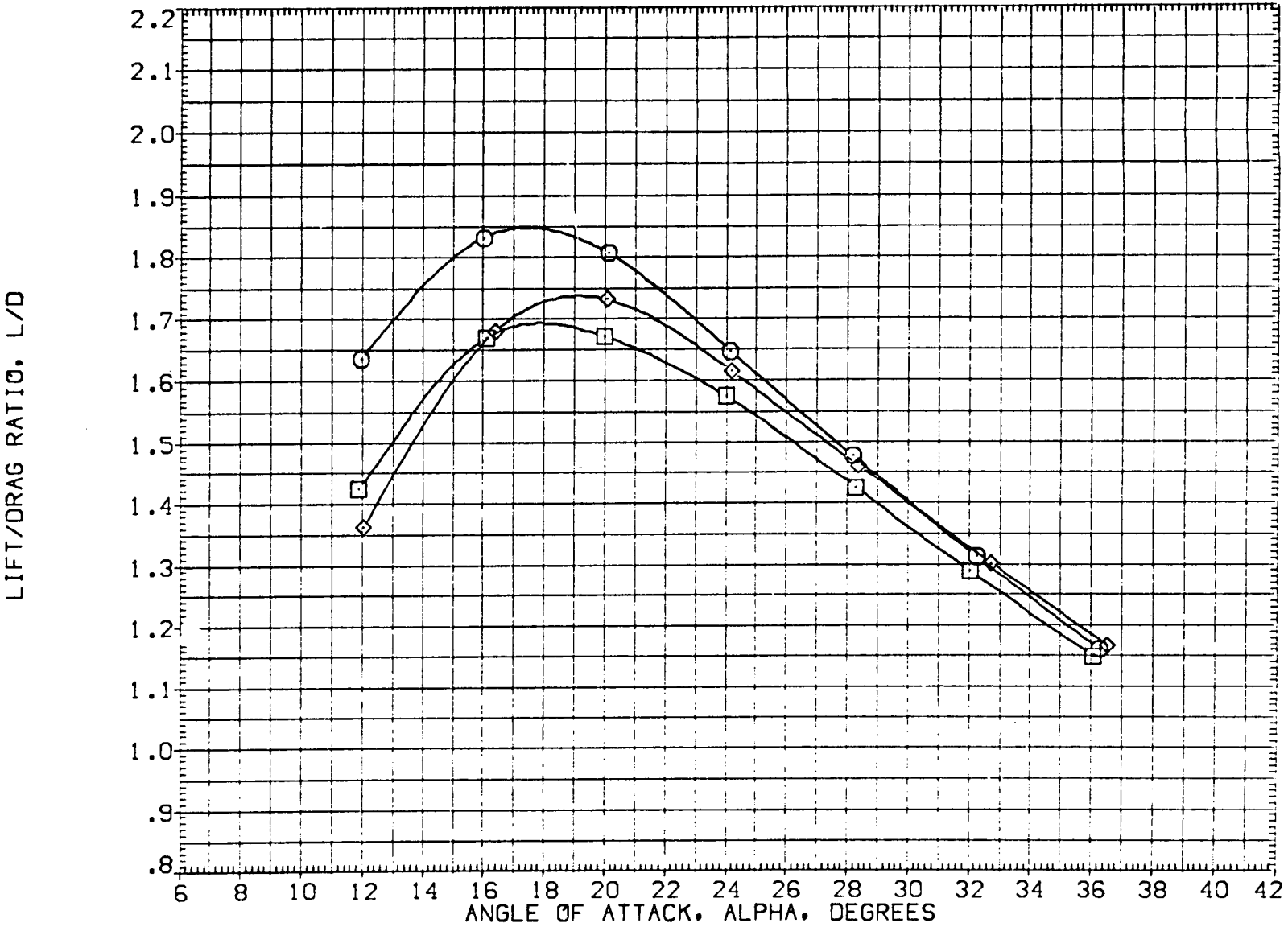

FIGURE 9. EFFECT OF WING FILLET ON LONGITUDINAL AERODYNAMIC CHARACTERISTICS

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RH#004)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH#003)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RH#001)	⋈	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RH#002)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RH#006)	⊠	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RH#007)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

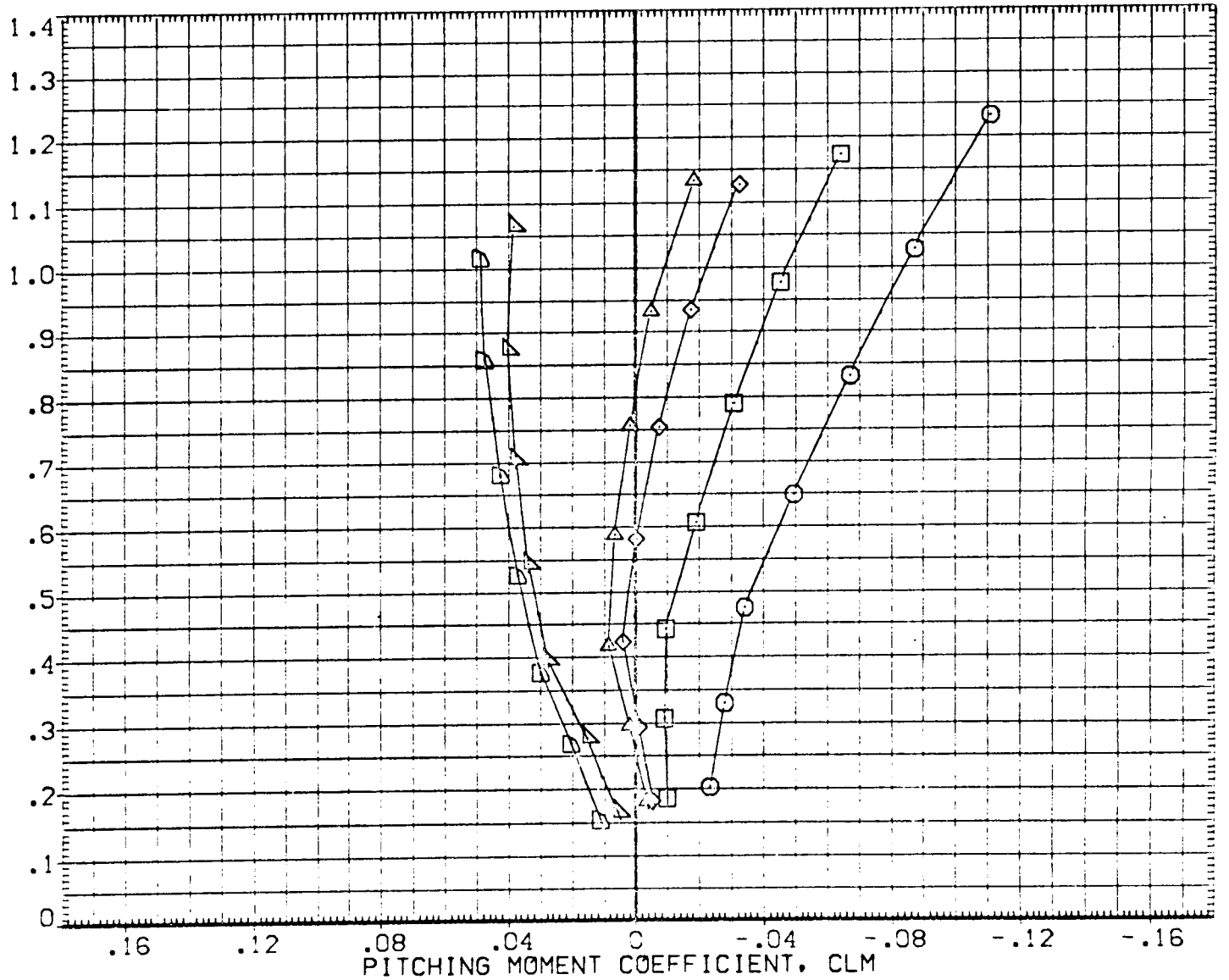

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A) MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(R##004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(R##003)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(R##001)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(R##002)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(R##006)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(R##007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

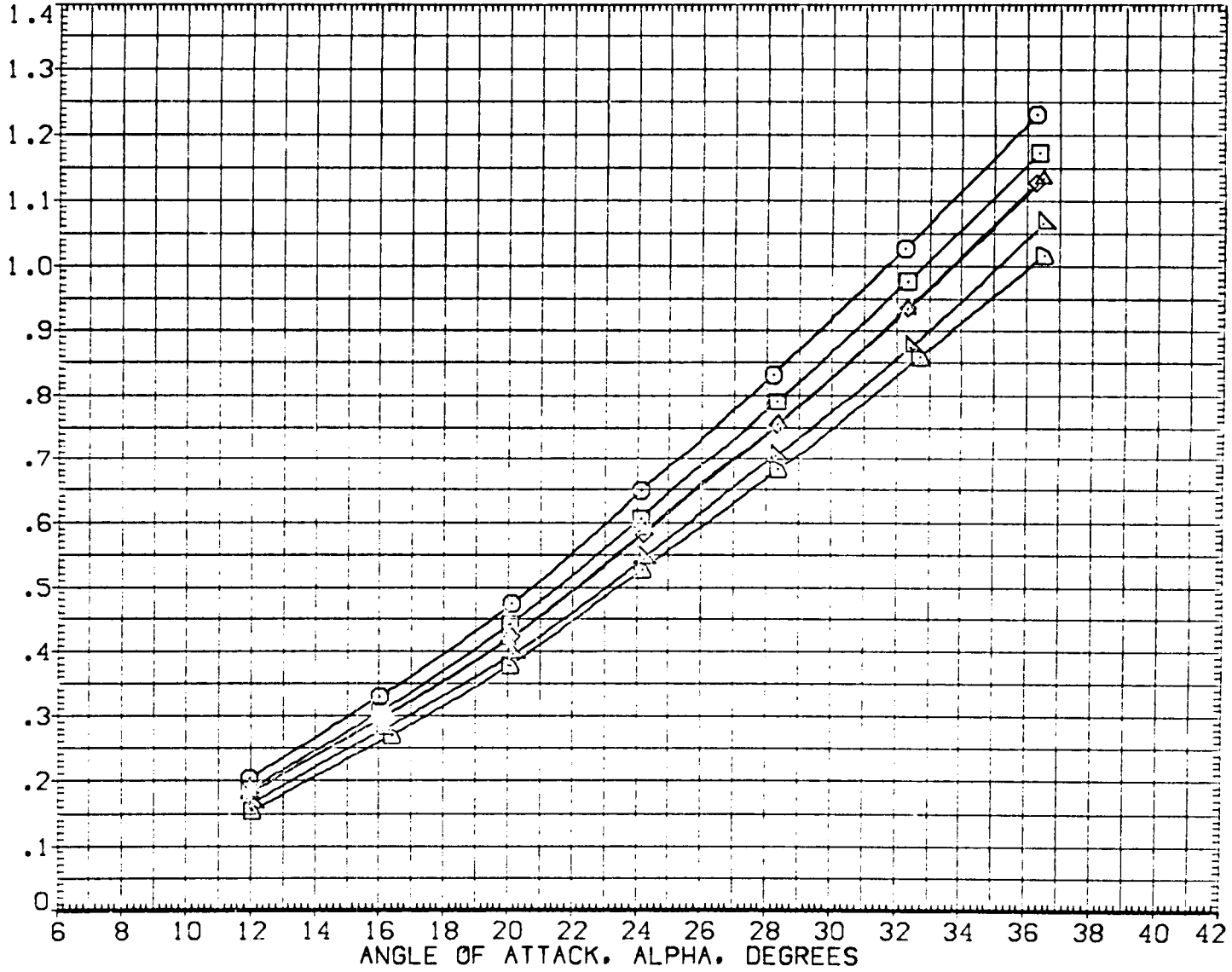

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH003)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RHH001)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RHH002)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH006)	◁	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

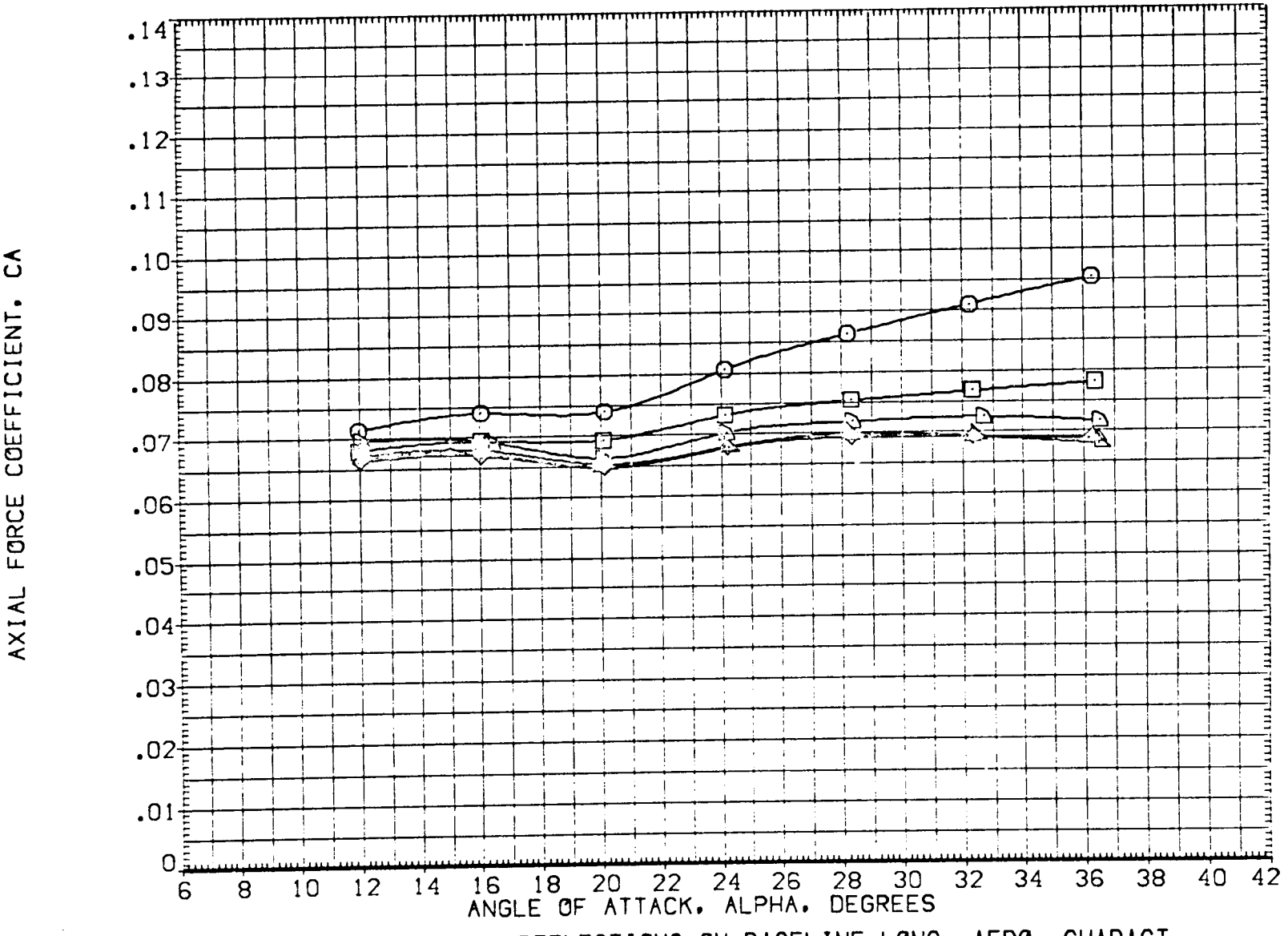

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH003)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RHH001)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RHH002)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH006)	◁	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

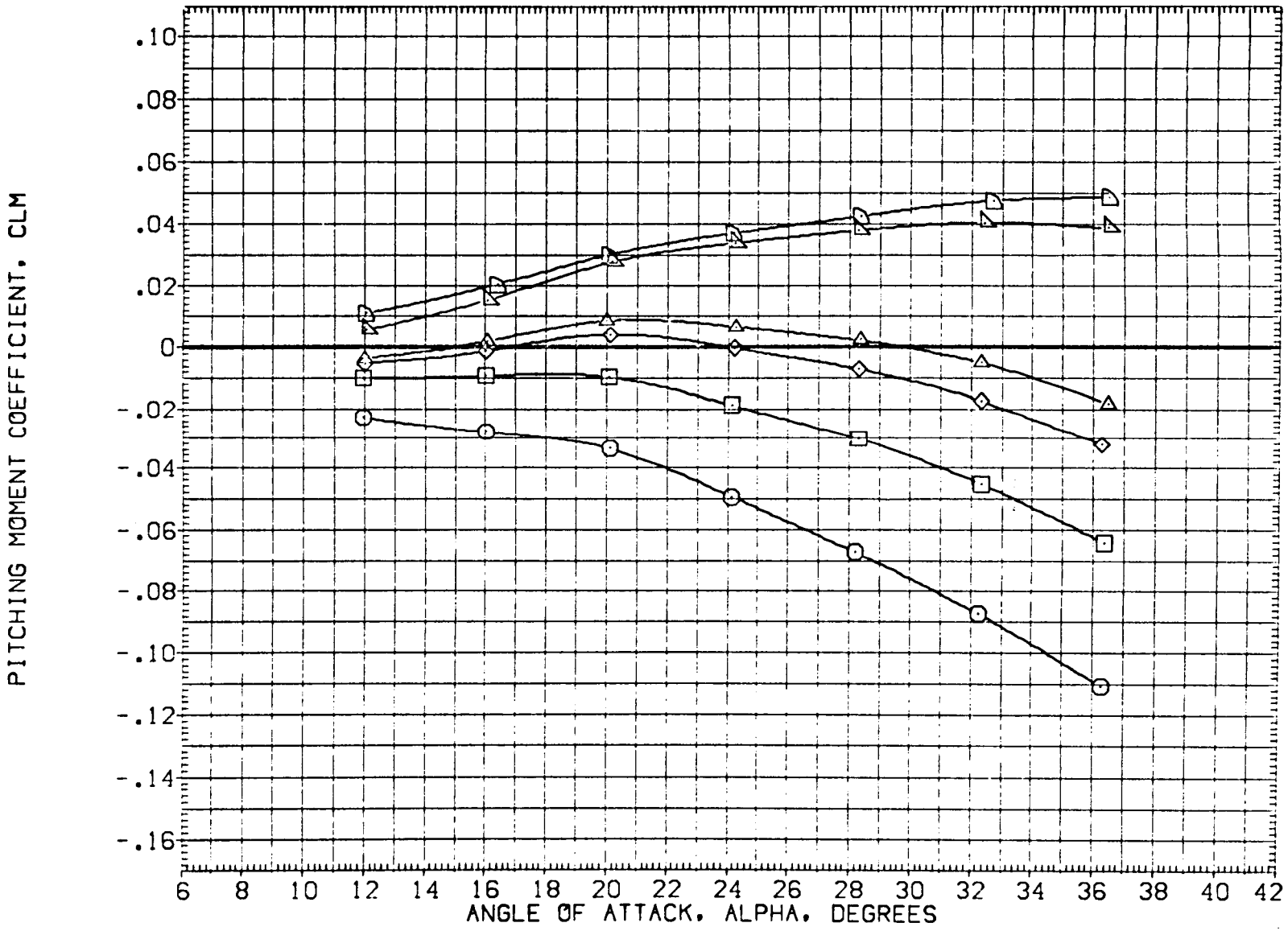

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH003)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RHH001)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RHH002)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH006)	◁	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

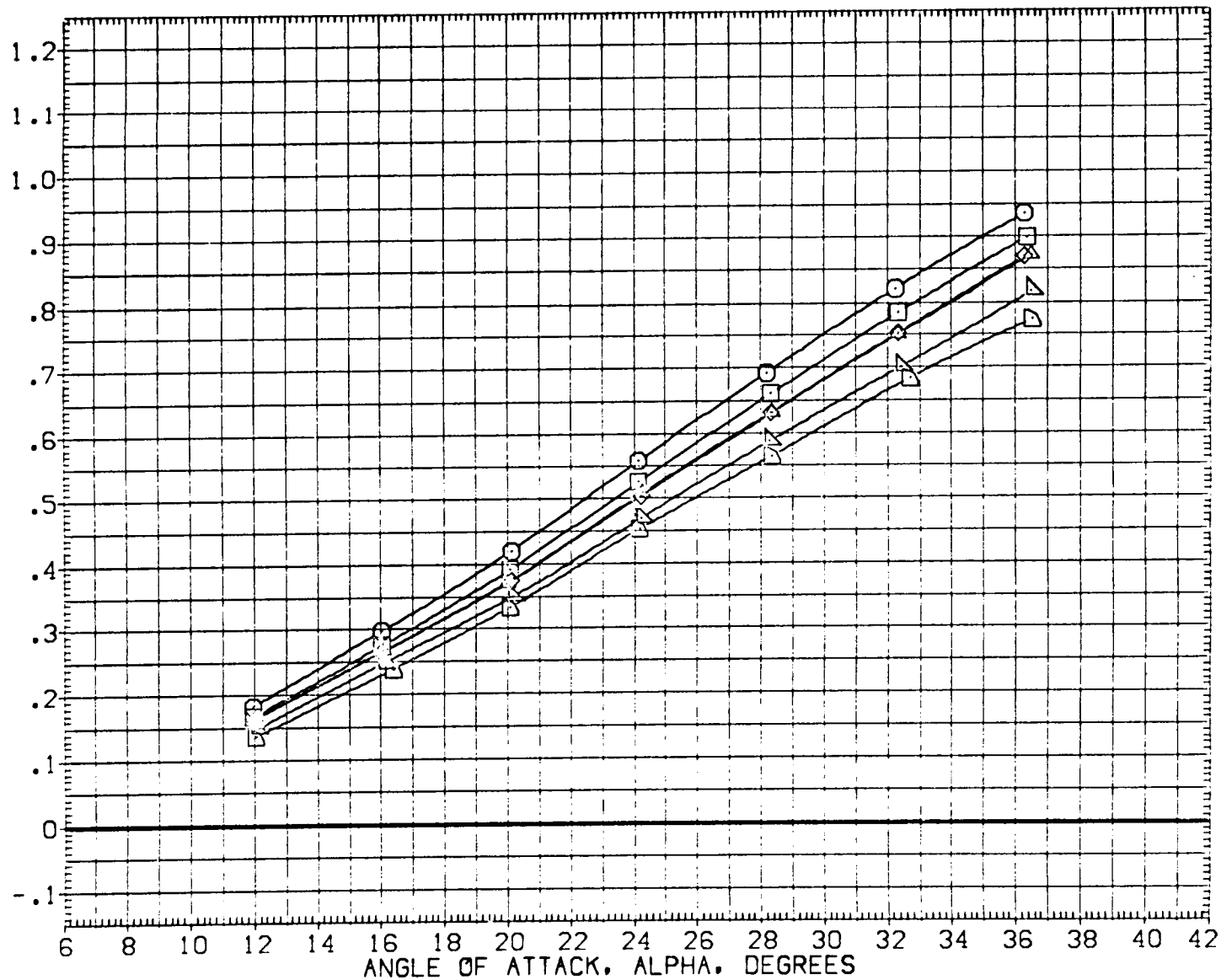

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH003)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RHH001)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RHH002)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH006)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

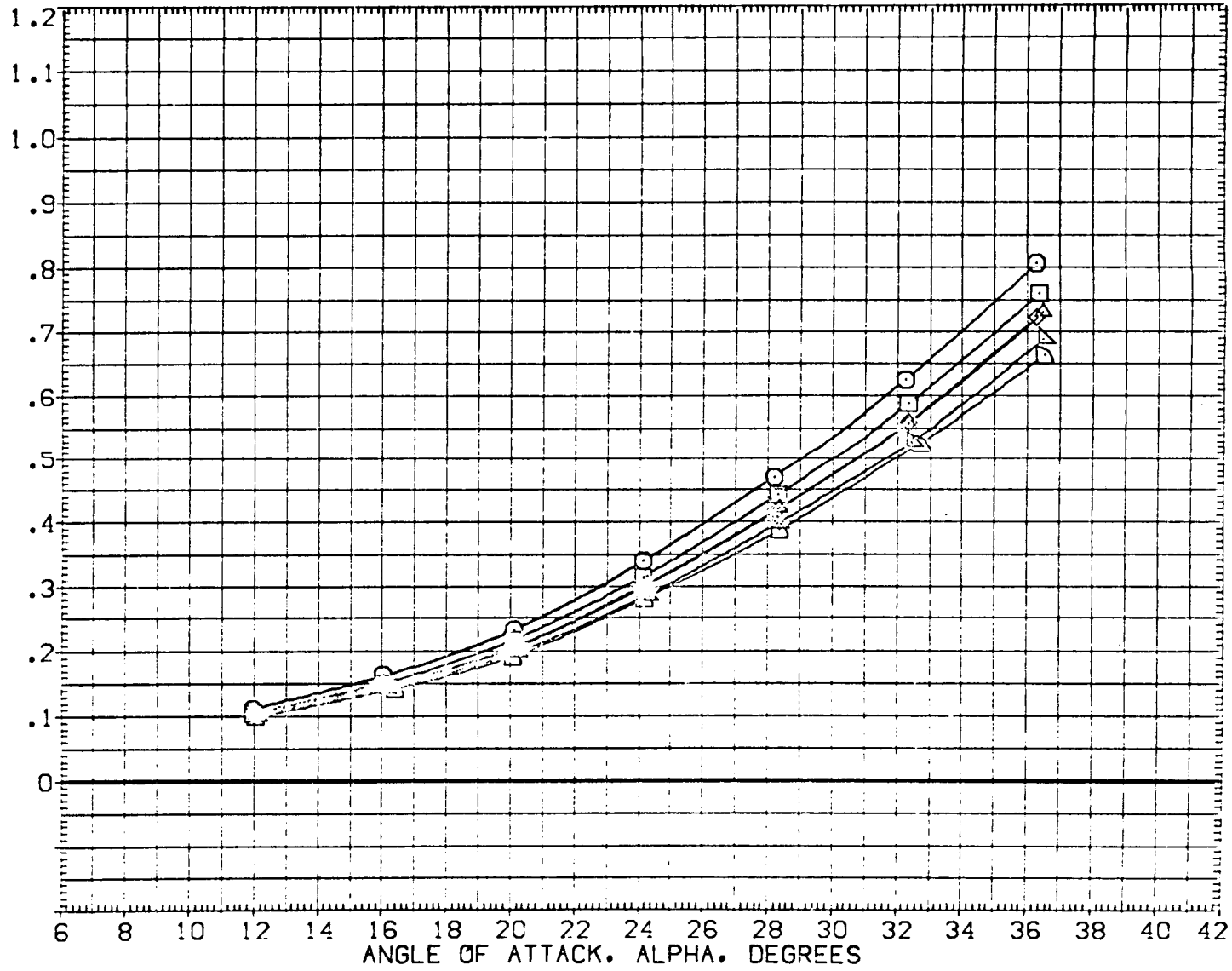

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH003)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	16.300	55.000
(RHH001)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	.000	55.000
(RHH002)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH006)	▽	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-20.000	-11.700	55.000
(RHH007)	▷	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

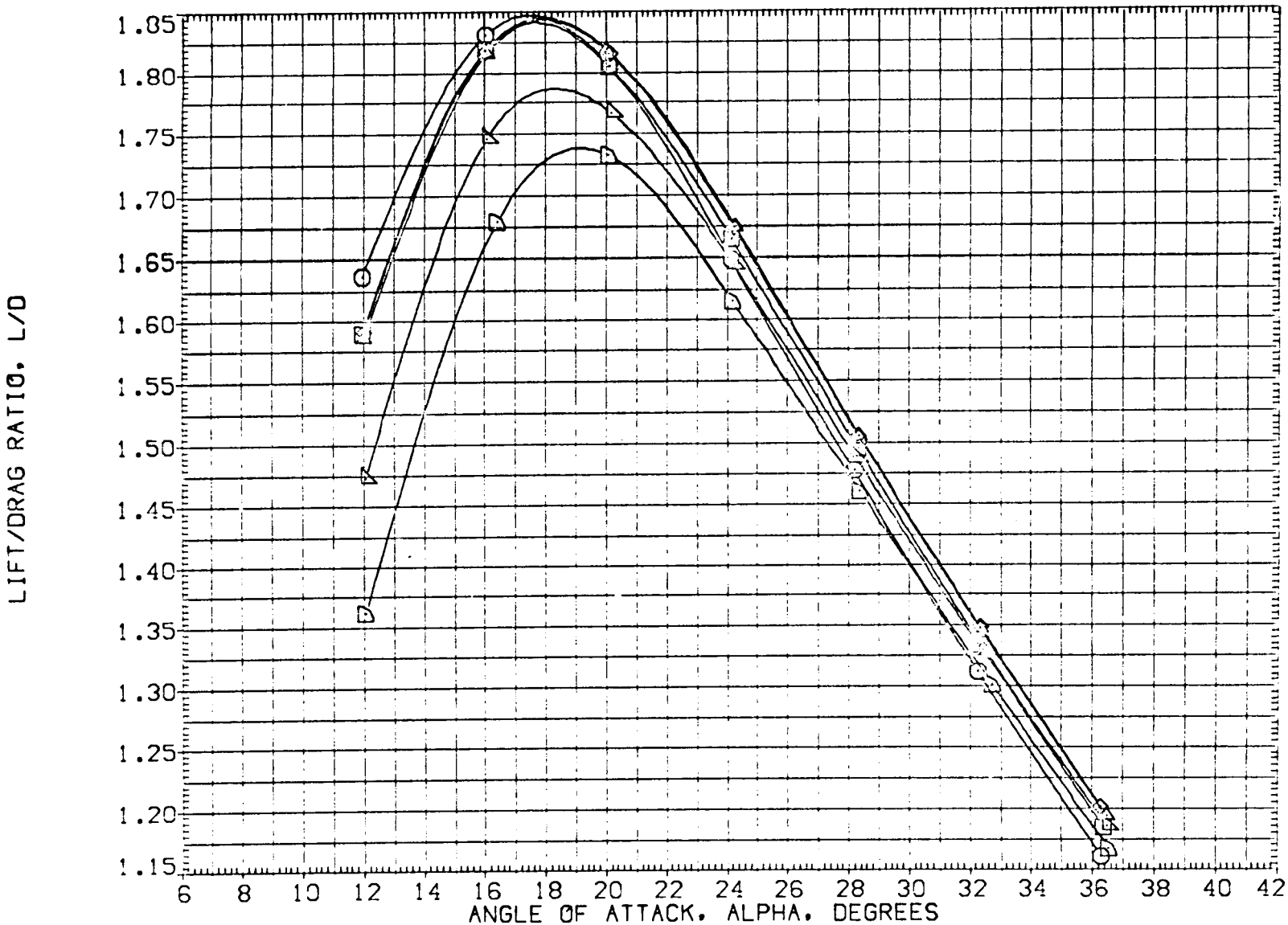

FIGURE 10. EFFECT OF CONTROL DEFLECTIONS ON BASELINE LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPOBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

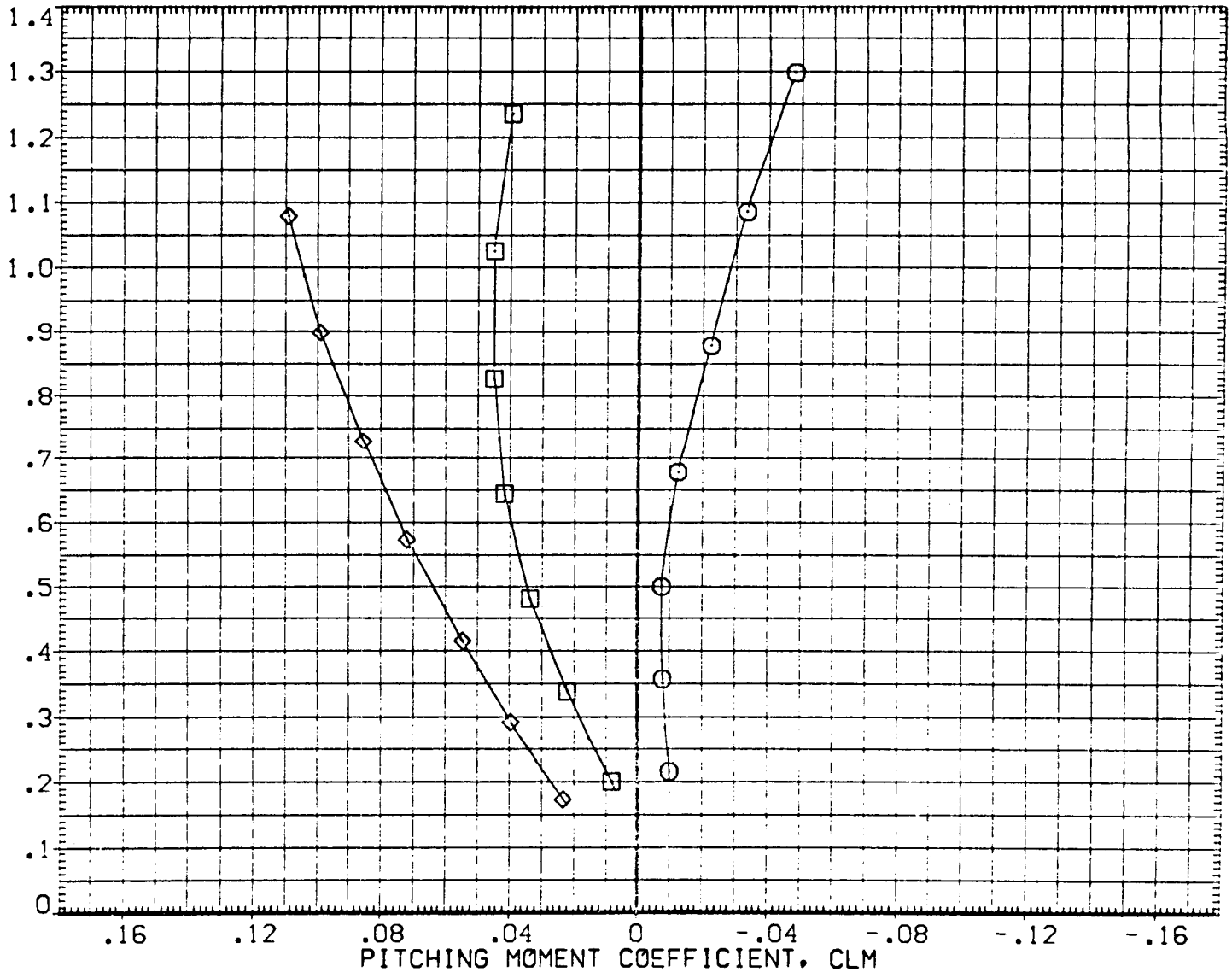

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH022)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

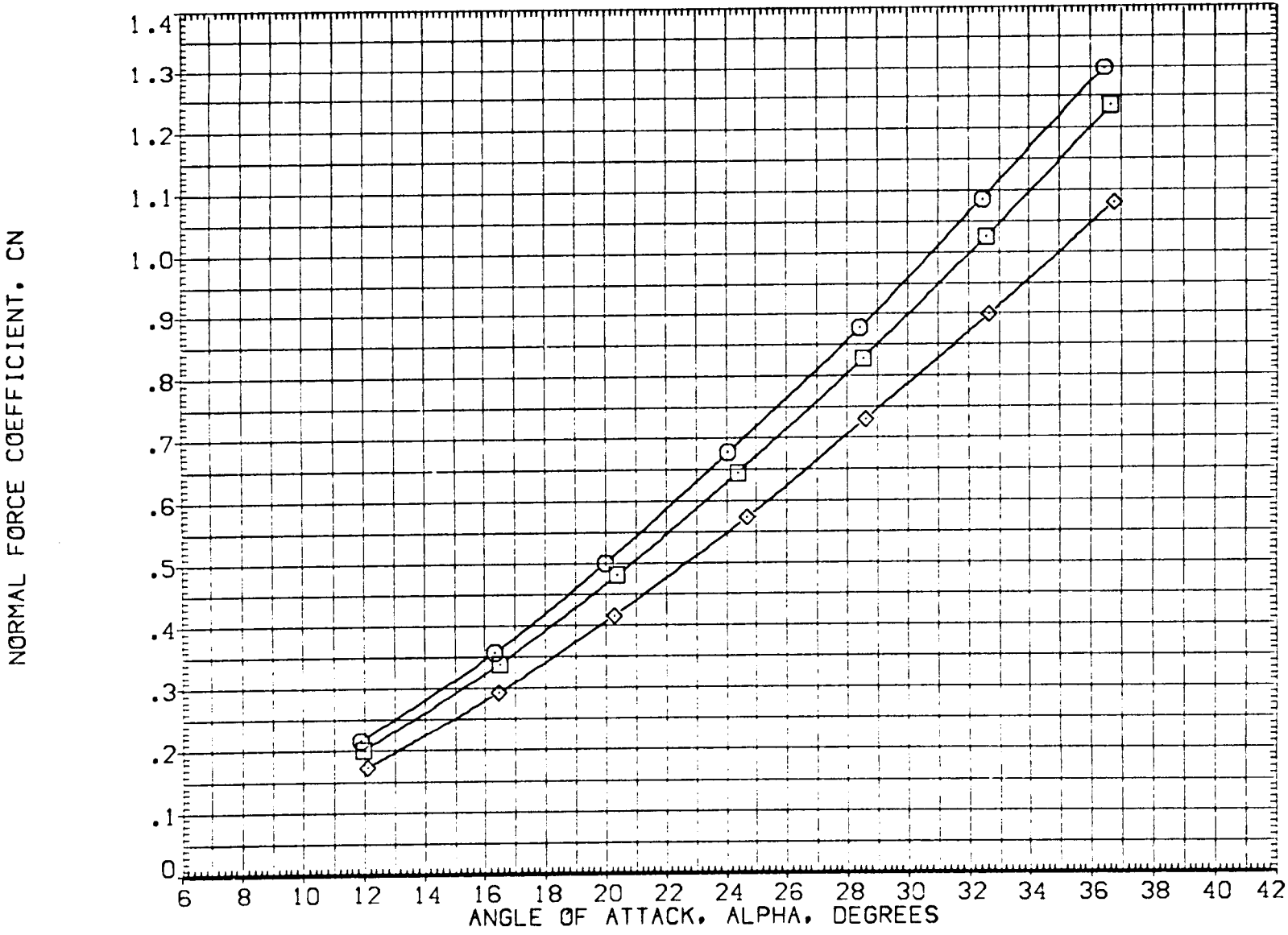

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

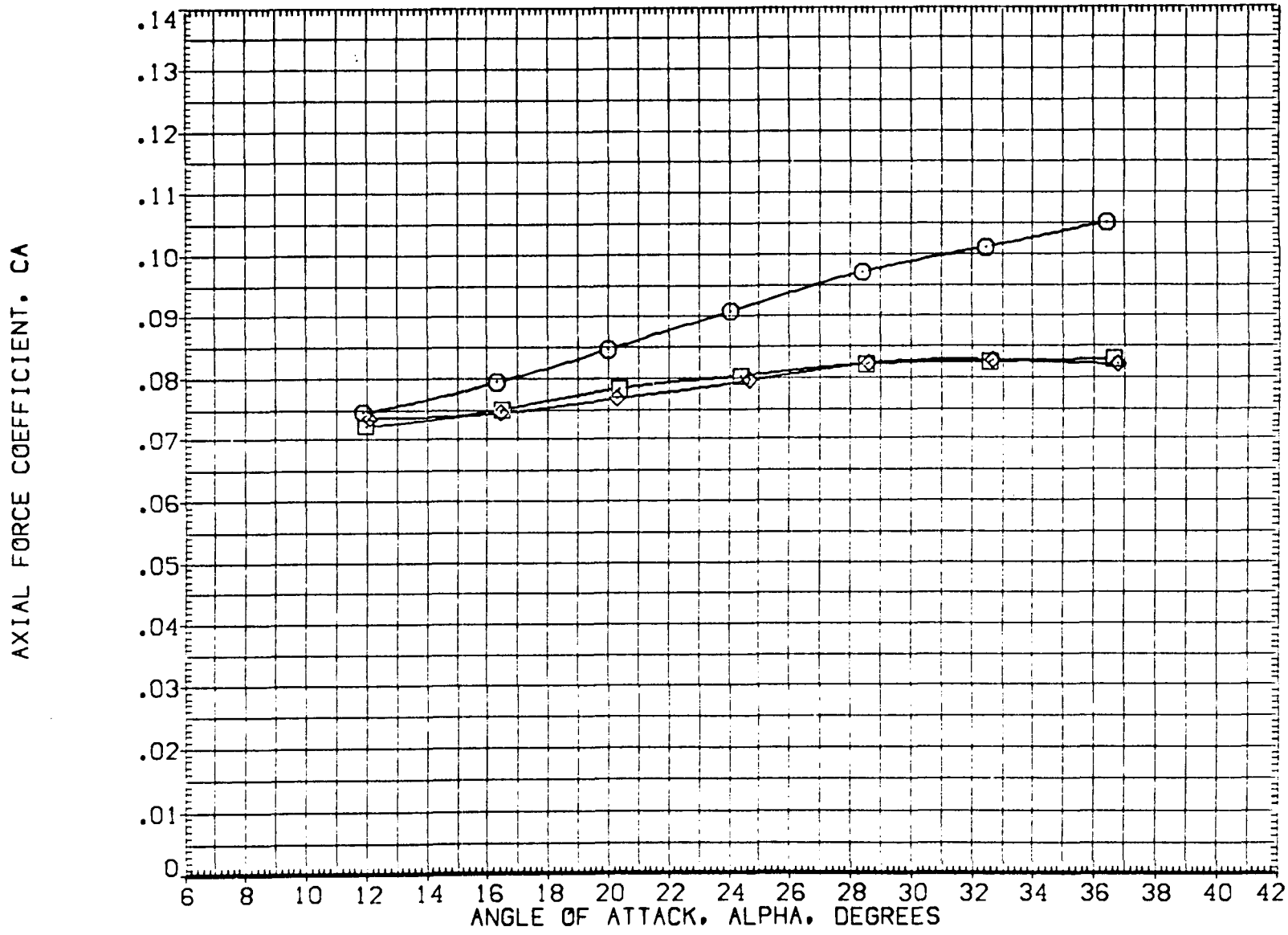

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

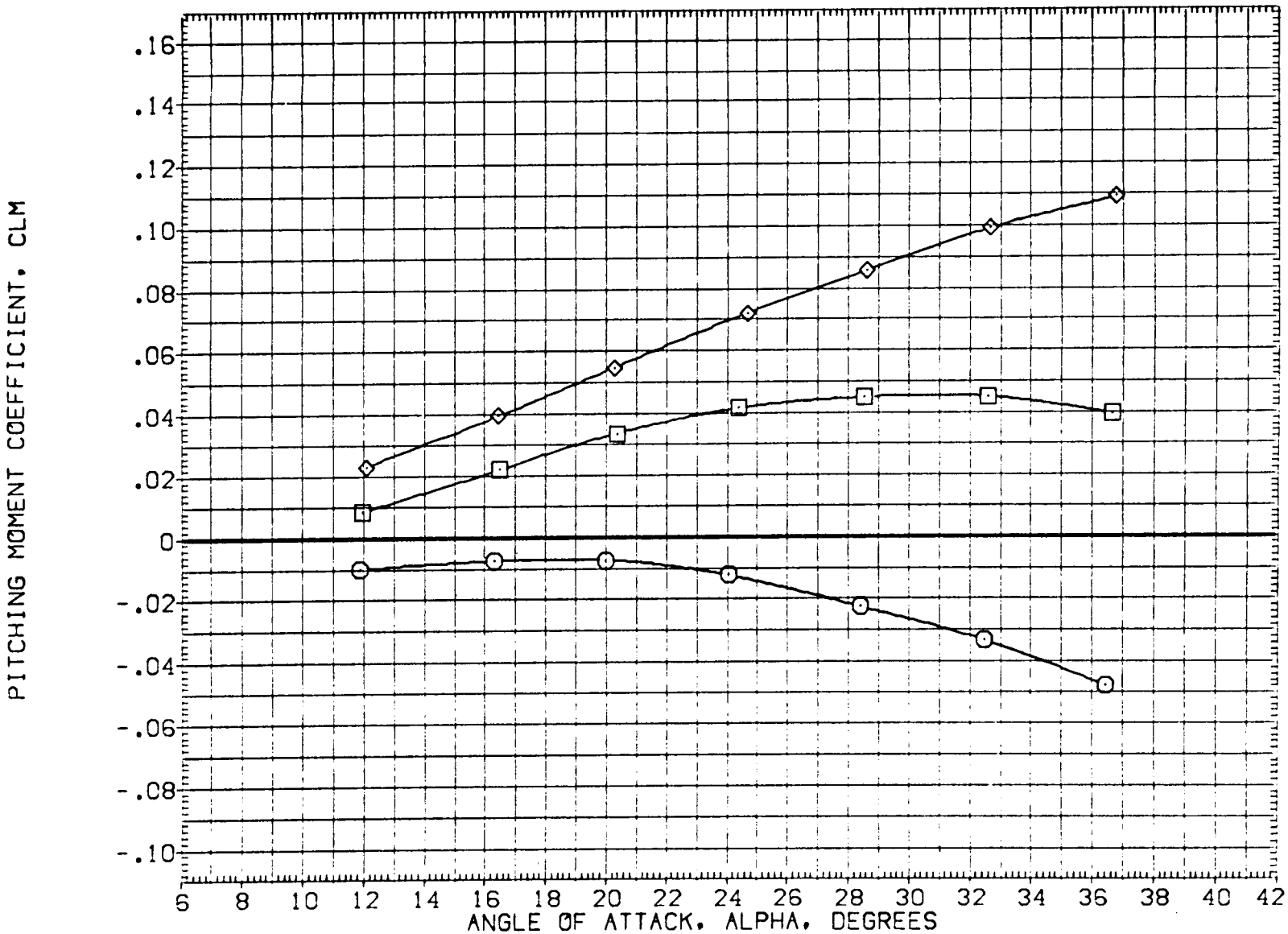

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RHH021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

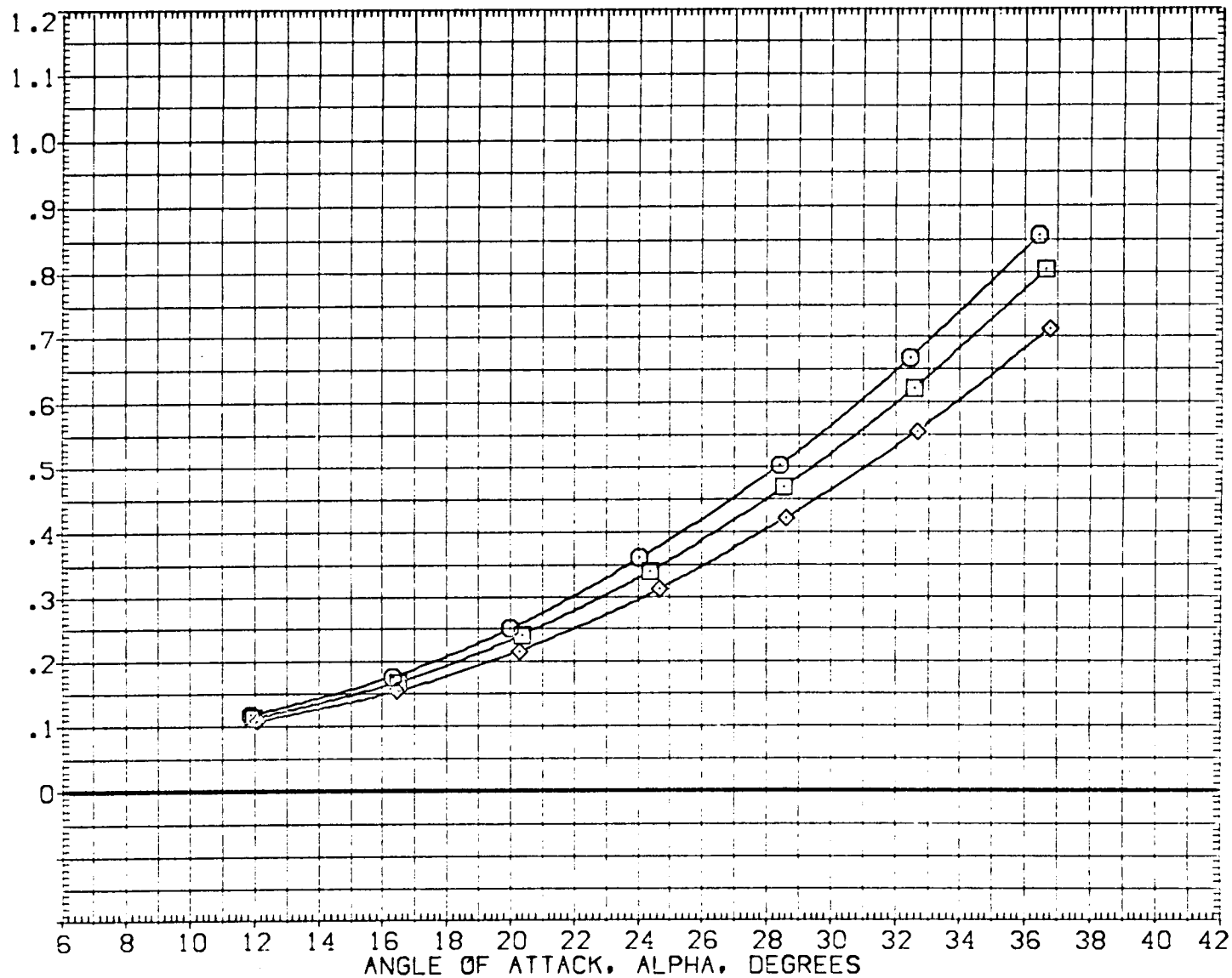

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RH-022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	10.000	16.300	55.000
(RH-021)	□	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	.000	-11.700	55.000
(RH-024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	.000	-40.000	-11.700	55.000

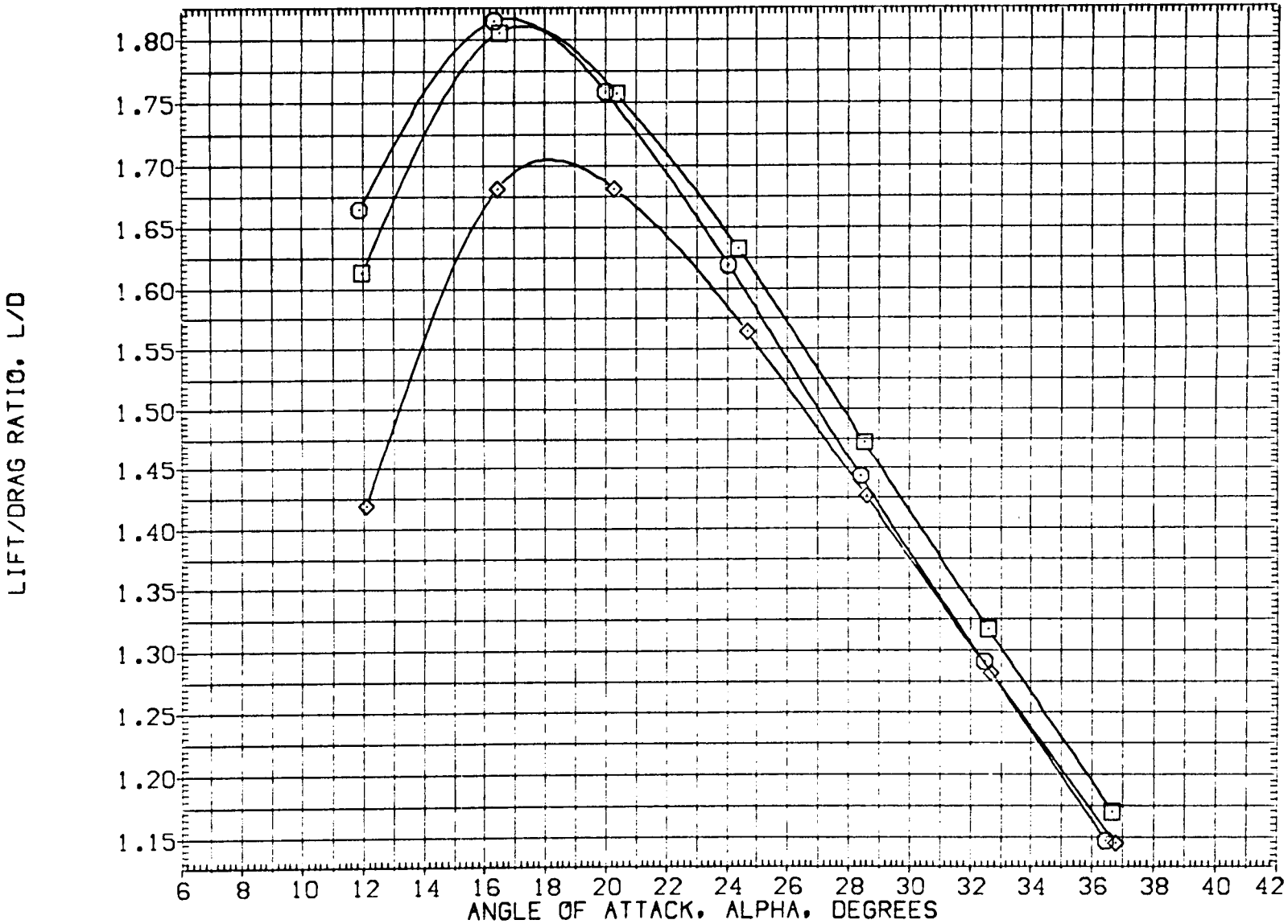

FIGURE 11. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/CANARD LONG. AERO. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH012)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH011)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(RHH014)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(RHH015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

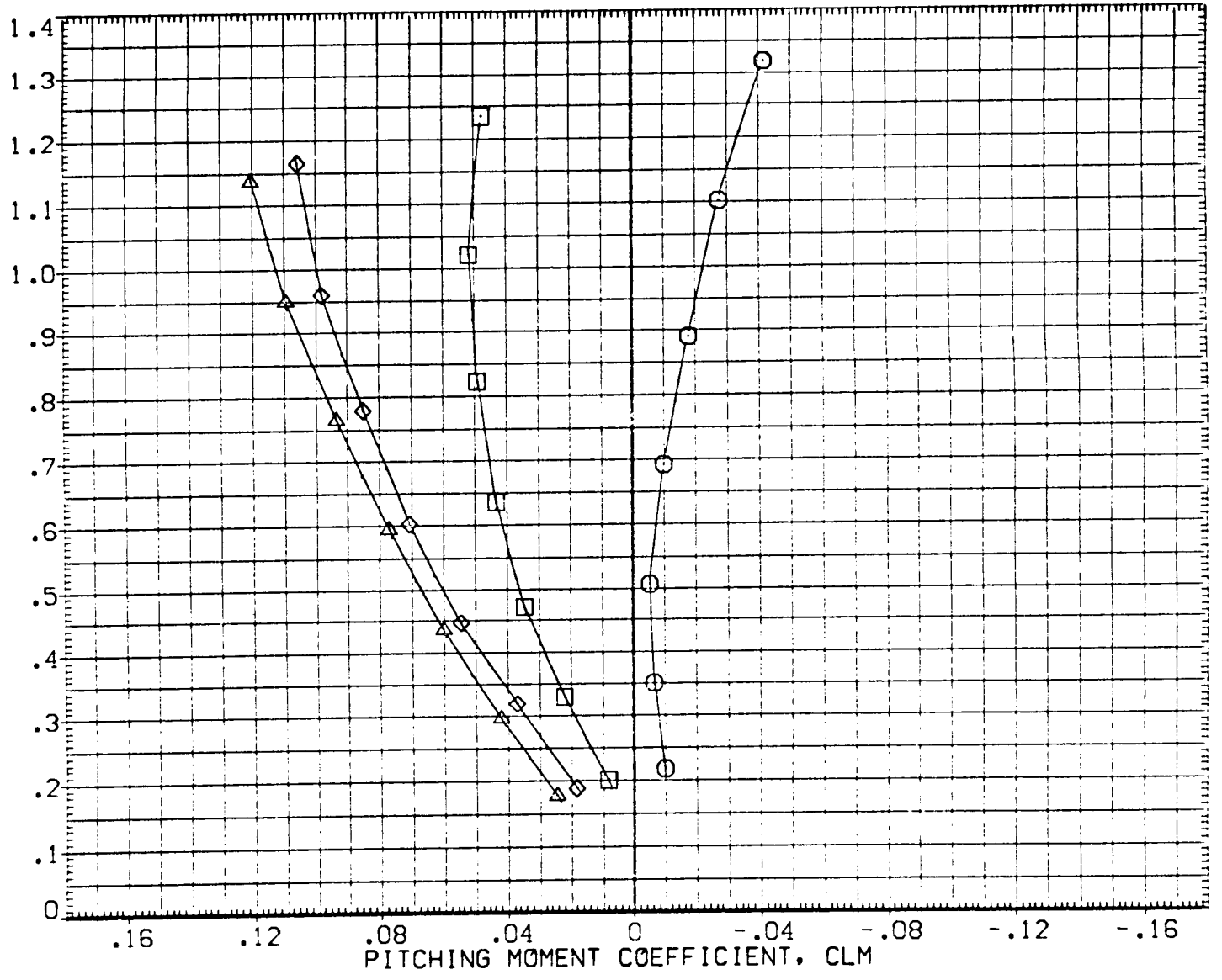

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH012)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH011)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(RHH014)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(RHH015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

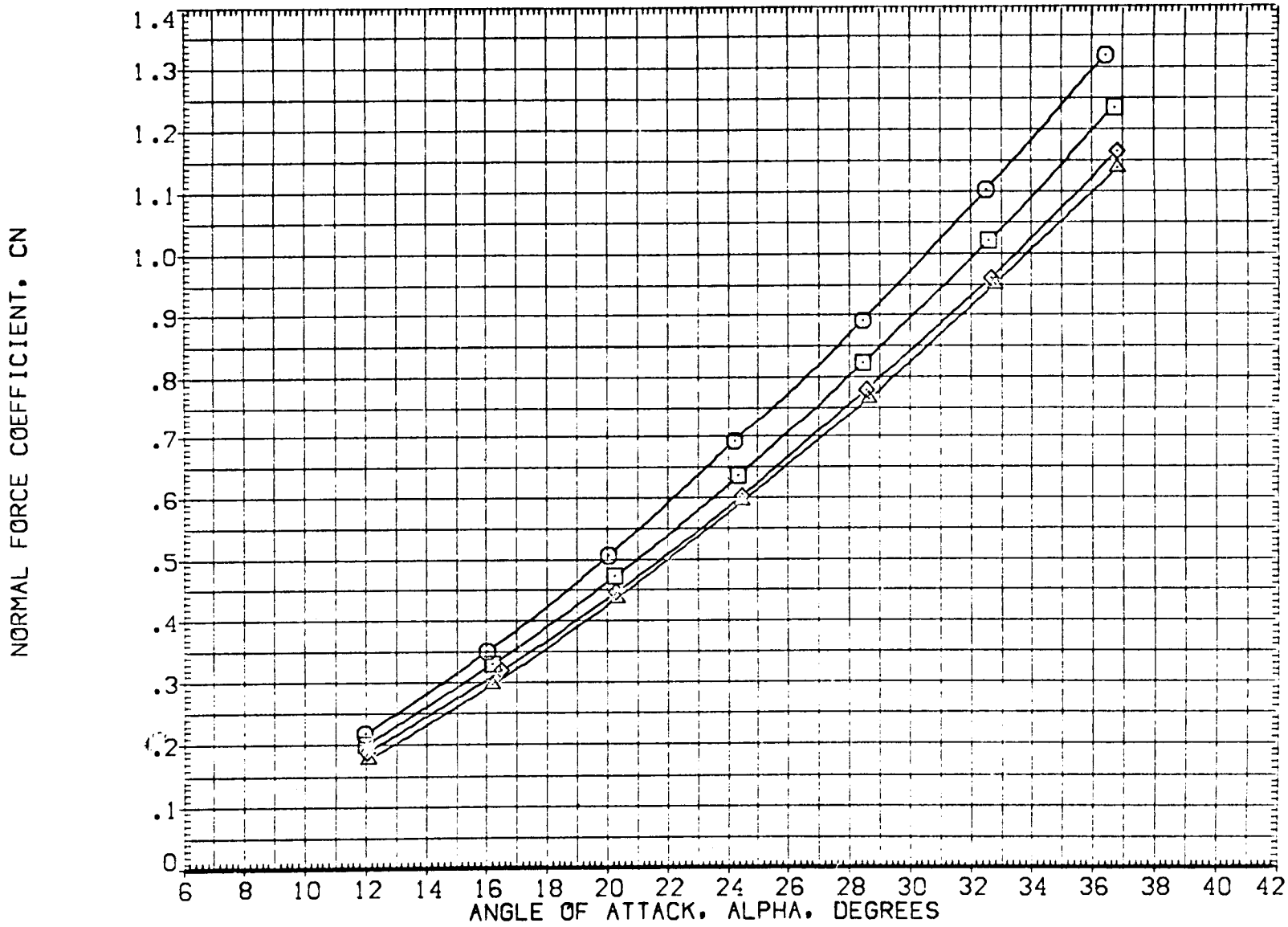

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(R##012)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##011)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(R##014)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(R##015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-10.000	-11.700	55.000

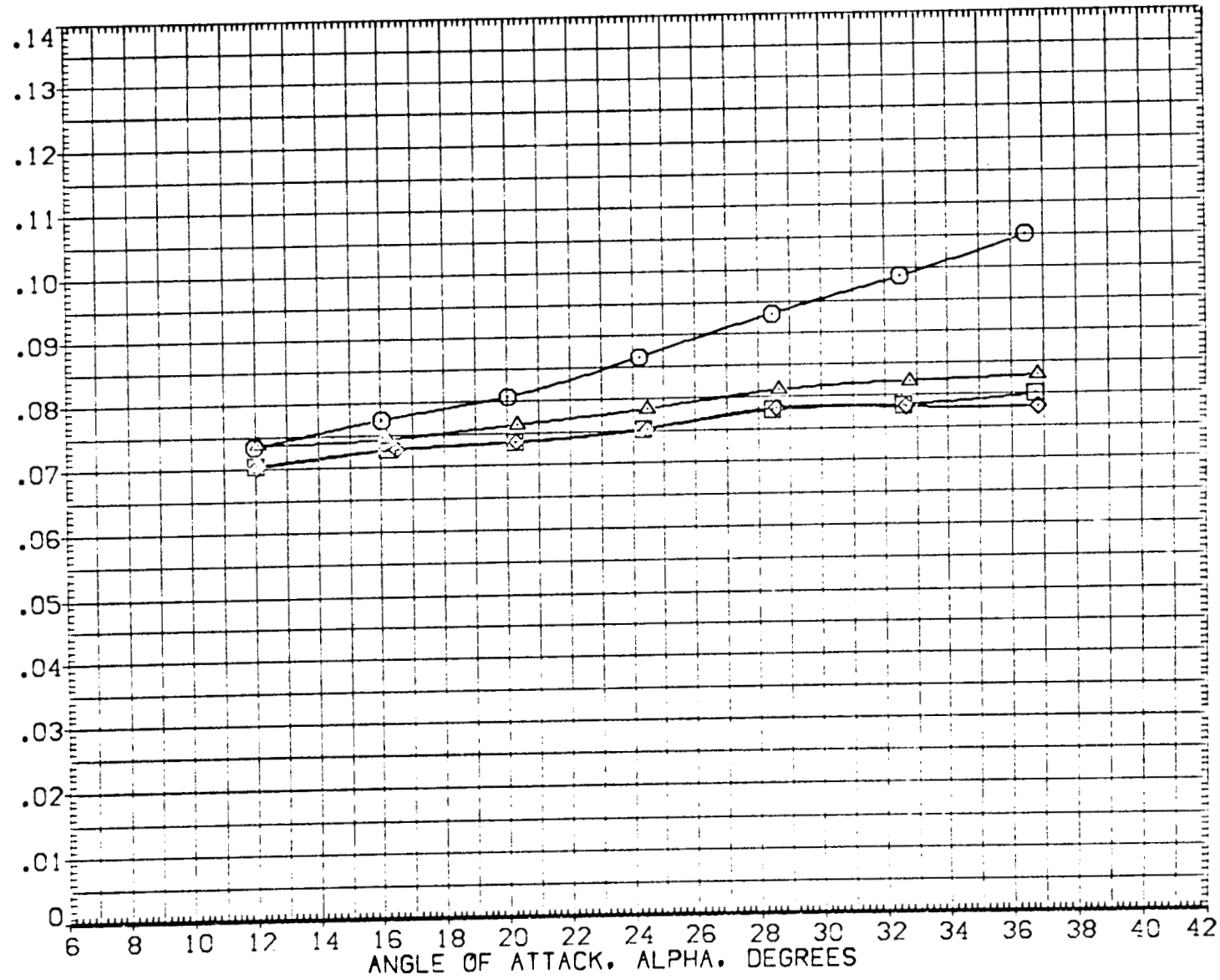

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(R##012)	◻	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(R##011)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(R##014)	⊠	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(R##015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

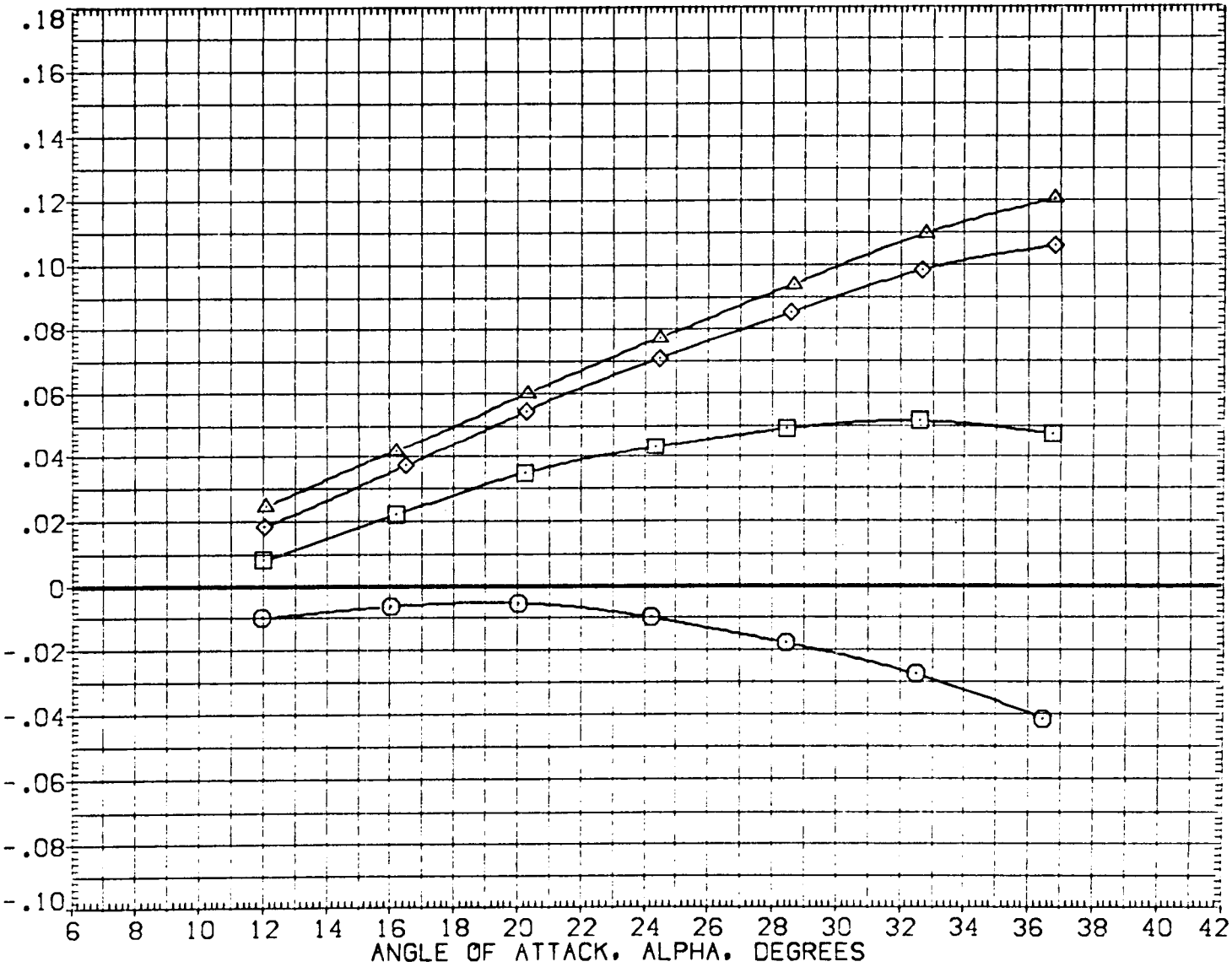

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPDBRK
(RHH012)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH011)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(RHH014)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(RHH015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

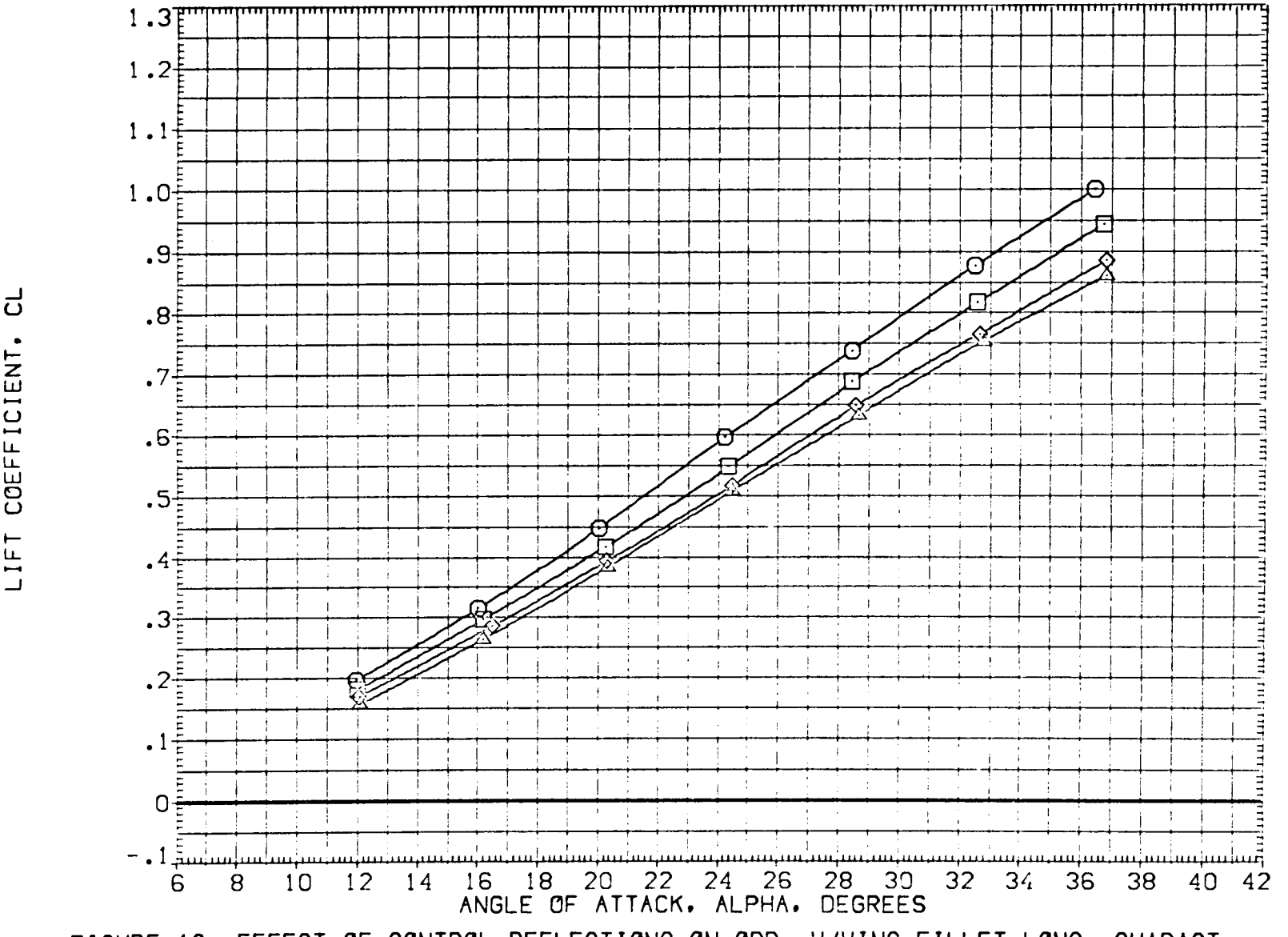

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BOFLAP	SPOBRK
(RHH012)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH011)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(RHH014)	◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(RHH015)	△	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

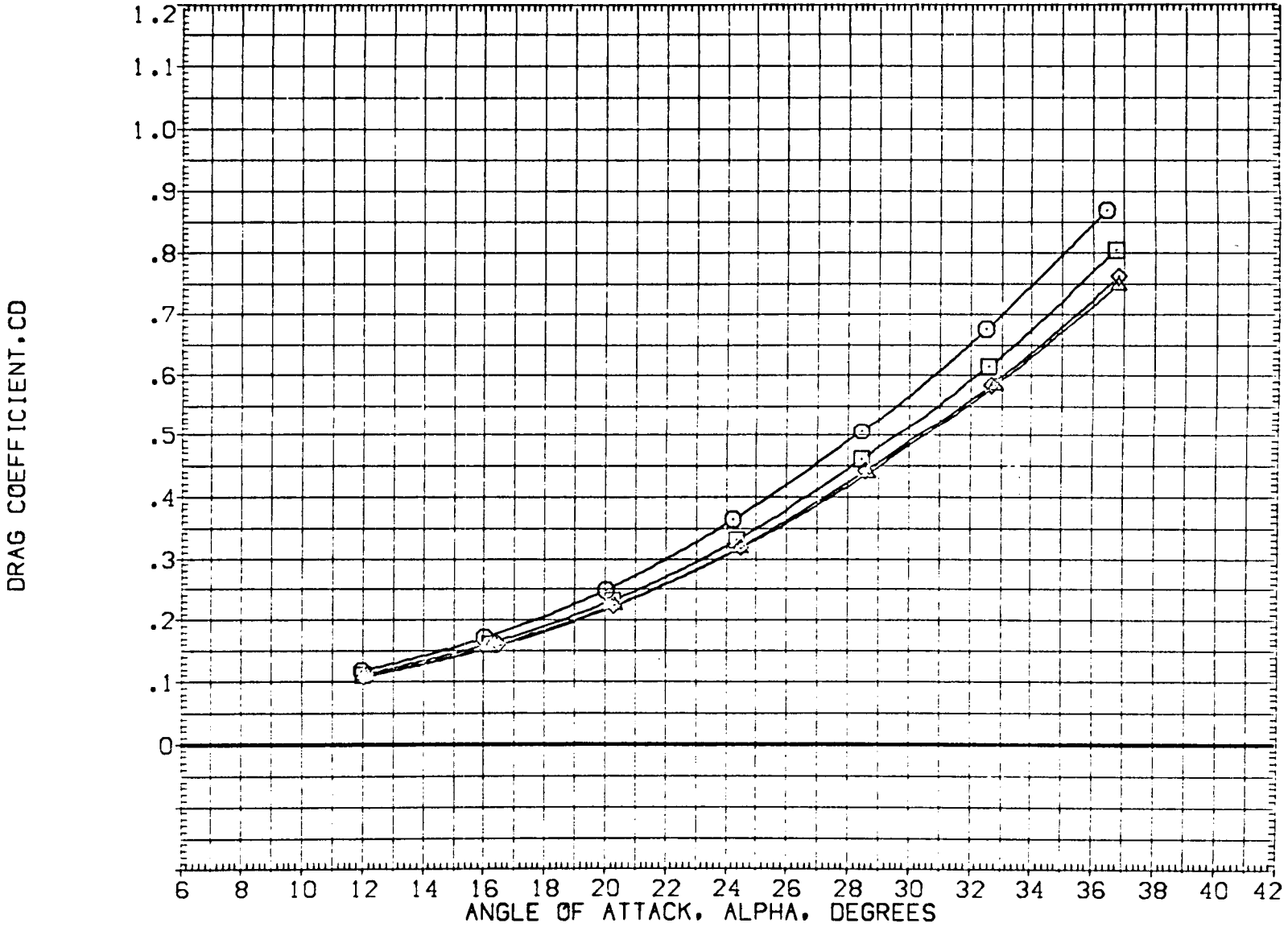

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ELEVTR	BDFLAP	SPDBRK
(RHH012) ○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	10.000	16.300	55.000
(RHH011) □	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	.000	-11.700	55.000
(RHH014) ◇	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-20.000	-11.700	55.000
(RHH015) △	CFHT 104 (LA-47) (B26C9F10M7)(W116E26S2)(V8R5)	.000	-40.000	-11.700	55.000

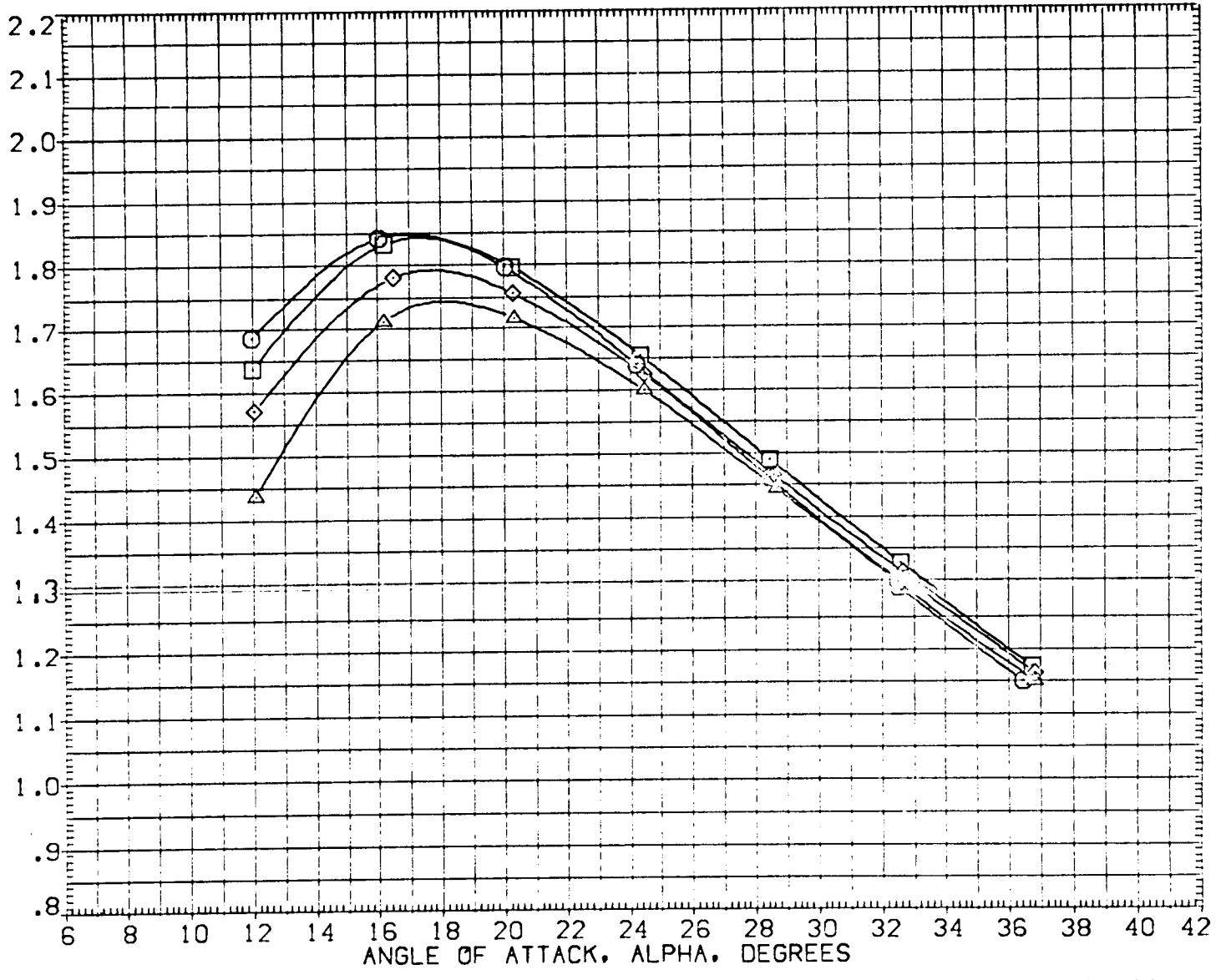

FIGURE 12. EFFECT OF CONTROL DEFLECTIONS ON ORB. W/WING FILLET LONG. CHARACT.

(A)MACH = 10.33

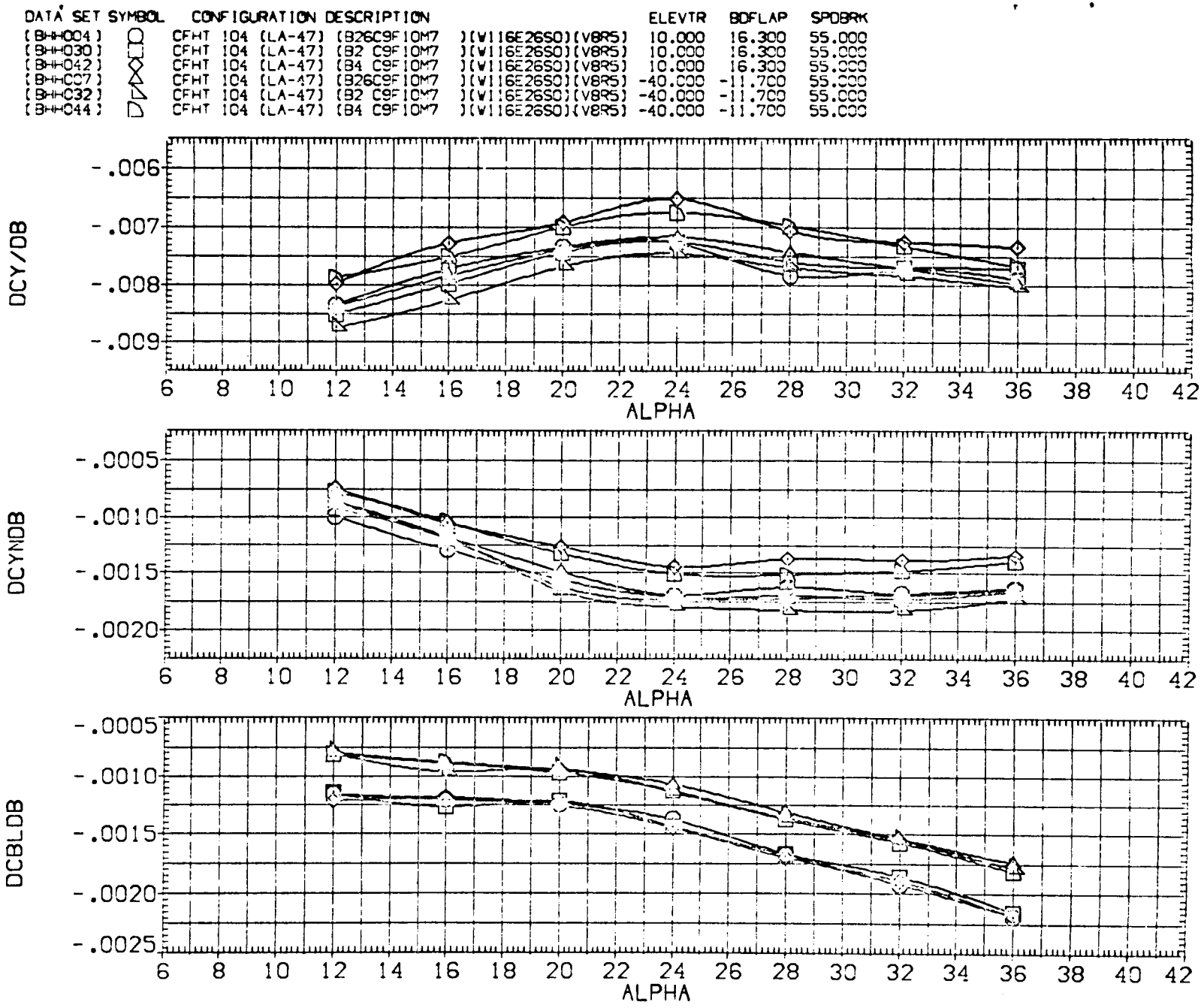

FIGURE 13. EFFECT OF ORBITER NOSE SHAPE ON LAT.-DIRECT. AERO CHARACTERISTICS

(A)MACH = 10.30

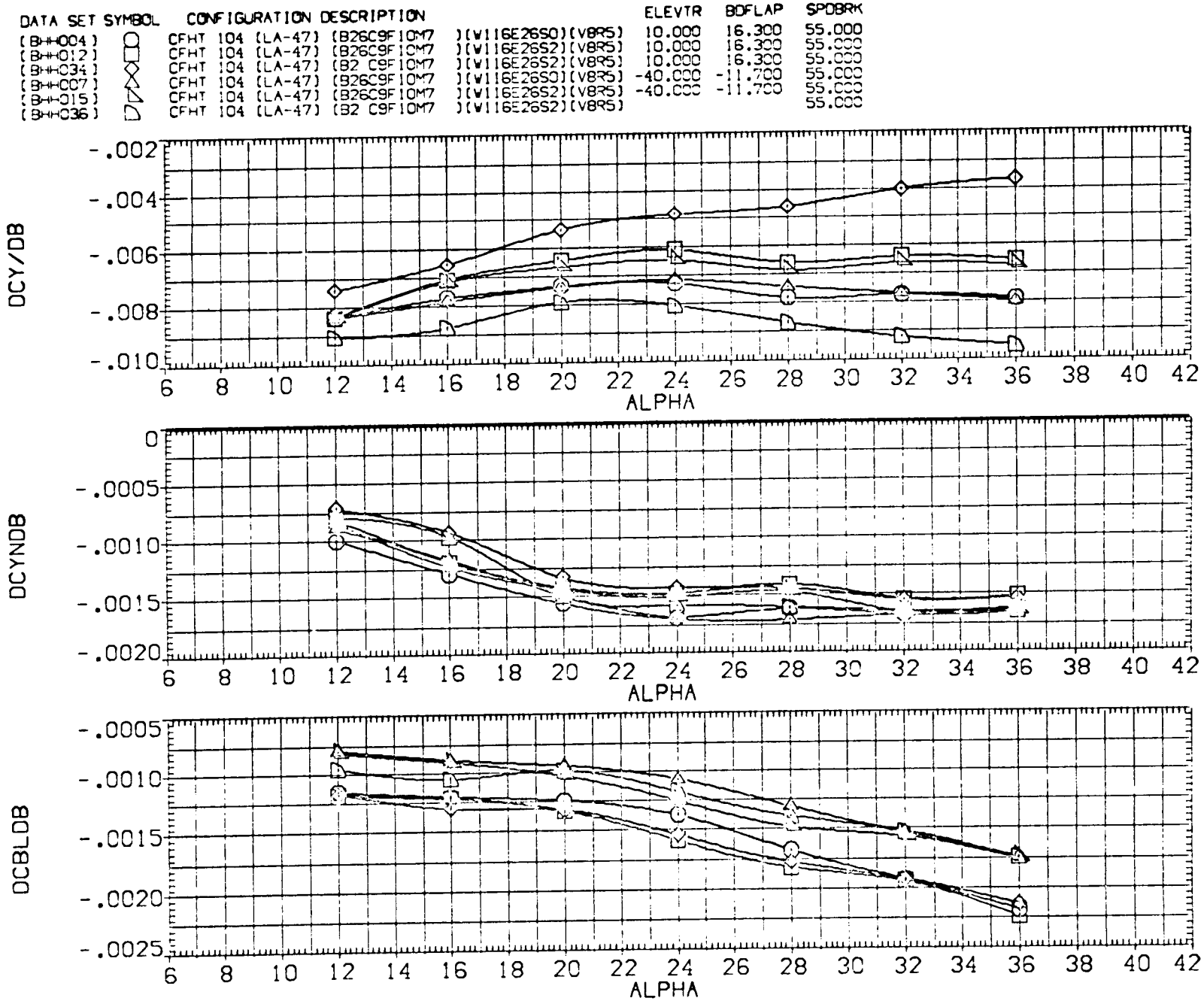

FIGURE 14. EFFECT OF WING FILLET AND ORBITER NOSE SHAPE ON LAT.-DIRECT CHARACT.

(A)MACH = 10.30

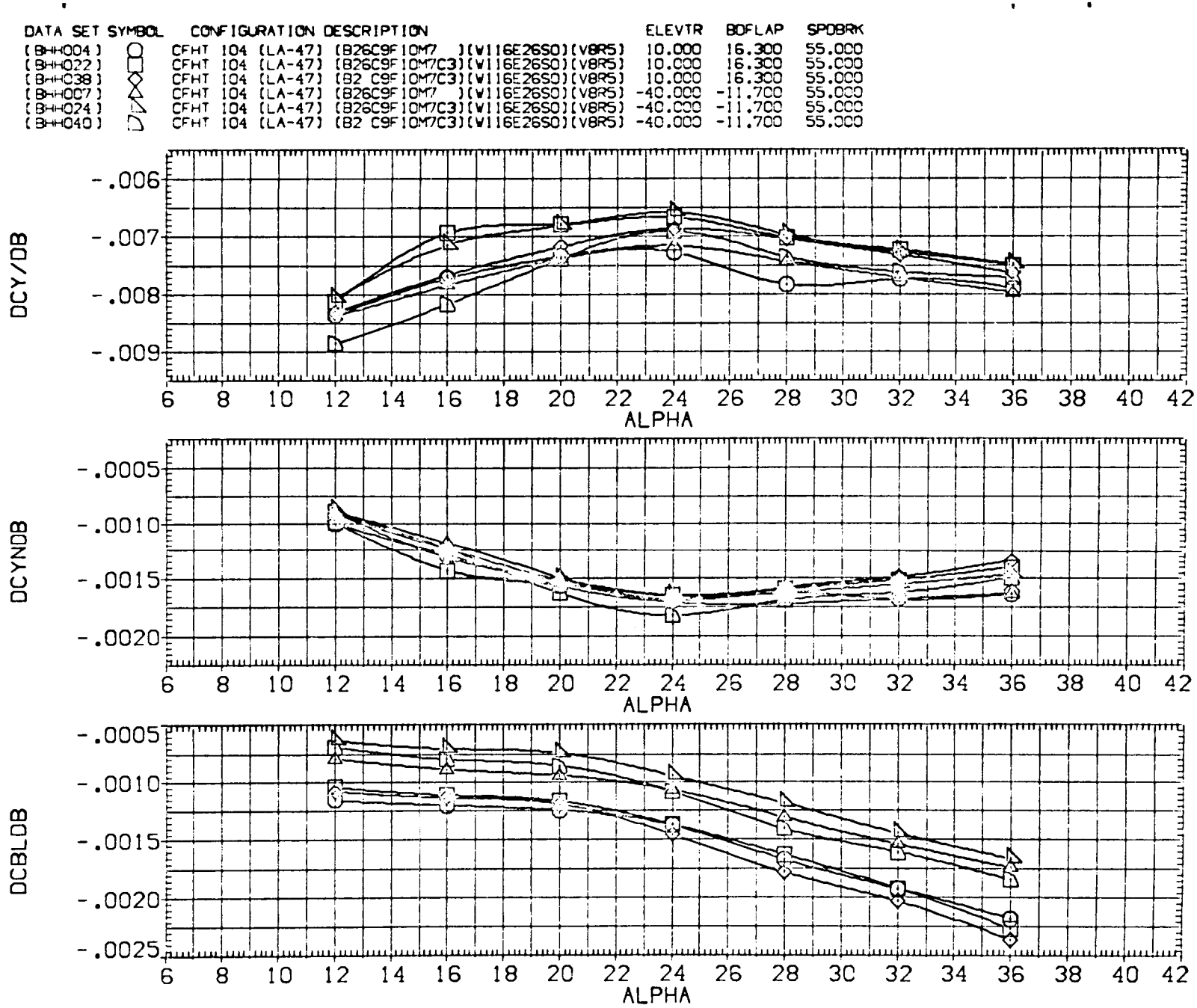

FIGURE 15. EFFECT OF CANARD AND ORBITER NOSE SHAPE ON LAT.-DIRECT. CHARACT.

(A)MACH = 10.30

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	BOFLAP	SPOBRK
(BHH022)	○	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	10.000	16.300	55.000
(BHH026)	□	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	10.000	16.300	55.000
(BHH024)	◇	CFHT 104 (LA-47) (B26C9F10M7C3)(W116E26S0)(V8R5)	-40.000	-11.700	55.000
(BHH028)	△	CFHT 104 (LA-47) (B26C9F10M7C4)(W116E26S0)(V8R5)	-40.000	-11.700	55.000

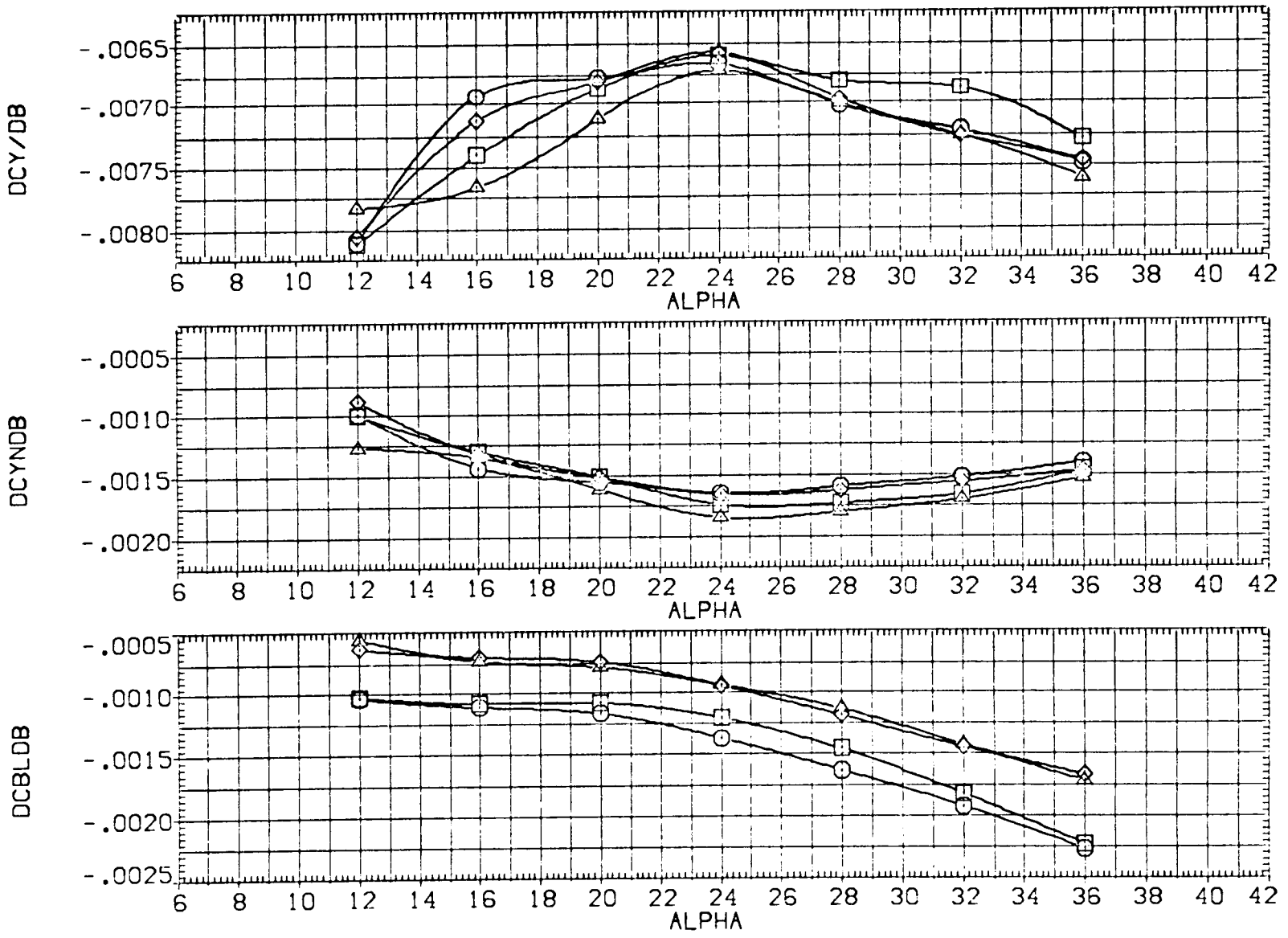

FIGURE 16. EFFECT OF CANARD CONFIGURATION ON LAT.-DIRECT. CHARACT.

(A)MACH = 10.30

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVTR	BOFLAP	SPOBRK
(BHH004)	○	CFHT 104 (LA-47) (B26C9F10M7)(W116E26SO)(V8R5)	10.000	16.300	55.000
(BHH009)	□	CFHT 104 (LA-47) (B26C9F10M7)(W116E26)(V8R5)	10.000	16.300	55.000

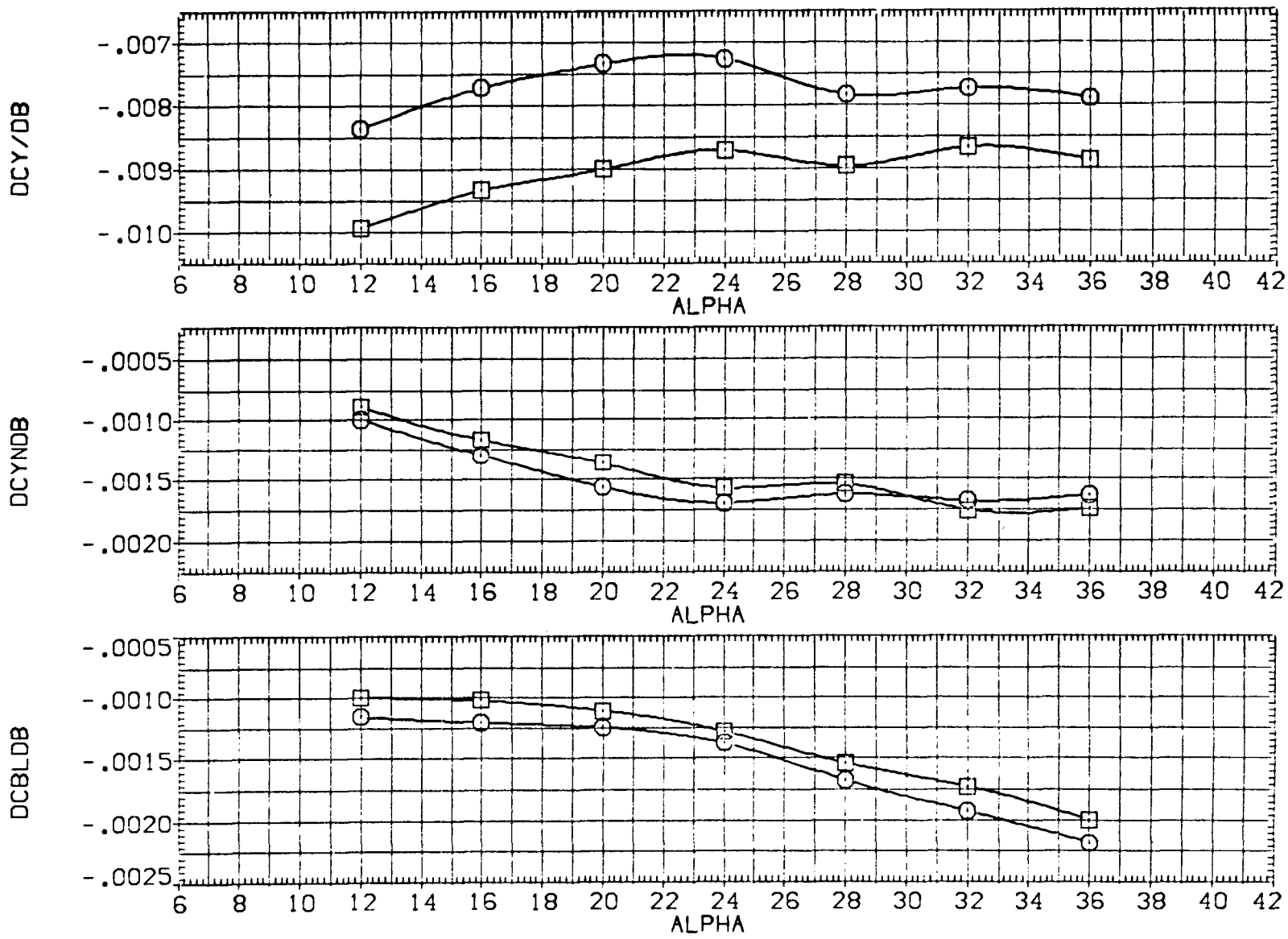

FIGURE 17. EFFECT OF WING FILLET ON LAT.-DIRECT. AERO. CHARACT.

(A)MACH = 10.30

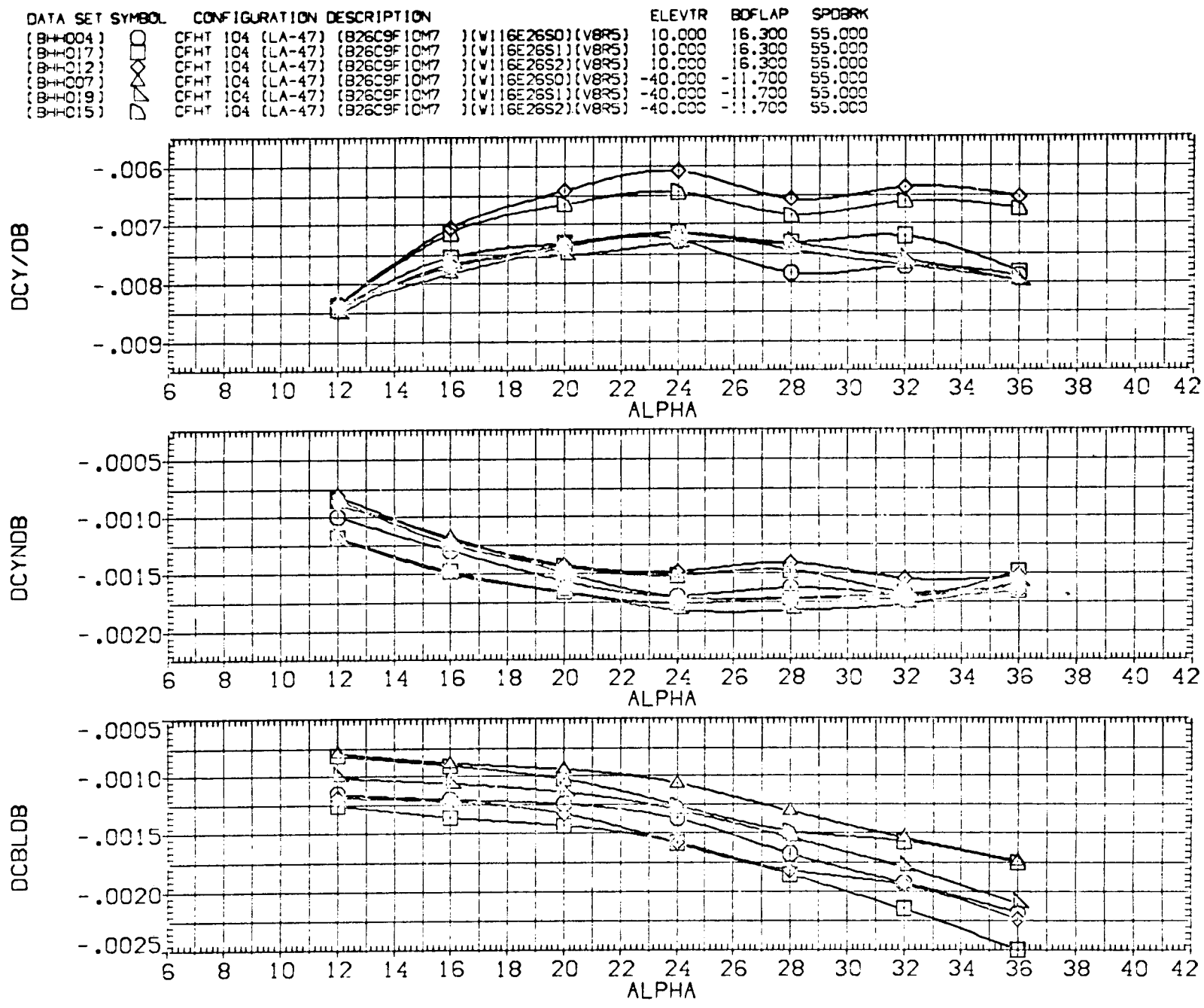

FIGURE 18. EFFECT OF WING FILLET CONFIGURATION ON LAT.-DIRECT CHARACT.

(A)MACH = 10.30

APPENDIX

TABULATED SOURCE DATA

(Note: Run number sequence follows schedule listed in TABLE II.)

Plotted data tabulations are available from DMS on request.

APPENDIX

LA47 TABULATED DATA PAGE 1

CFHT 104 (LA-47) (B26C9F10M7) (W16E26S0) (V8R5) (RHH001)

PARAMETRIC DATA

BETA = .000 ELEVTR = .000
AILRON = .000 BDFLAP = .000
SPDBRK = 55.000

RUN NO. 33/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.005	-.03149	.18049	.06625	-.00510	-.00014	.00029	-.00302	.16277	.10232	1.59074
10.330	16.025	-.03189	.29492	.06691	-.00118	-.00005	.00031	-.00419	.26499	.14573	1.81838
10.330	20.133	-.02919	.42312	.06480	.00404	-.00005	.00022	-.00464	.37496	.20648	1.81594
10.330	24.222	-.02842	.58166	.06770	-.00029	.00012	.00009	-.00604	.50267	.30038	1.67348
10.330	28.353	-.02782	.75469	.06919	-.00712	-.00001	.00031	-.00862	.63129	.41930	1.50561
10.330	32.338	-.02735	.93410	.06908	-.01745	-.00021	.00037	-.01073	.75227	.55803	1.34808
10.330	36.291	-.02399	1.12657	.06893	-.03235	-.00018	.00046	-.01275	.86724	.72236	1.20056

CFHT 104 (LA-47) (B26C9F10M7) (W16E26S0) (V8R5) (RHH002)

PARAMETRIC DATA

BETA = .000 ELEVTR = .000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 34/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.025	-.03508	.18089	.06660	-.00350	-.00018	.00028	-.00297	.16305	.10283	1.58568
10.330	16.077	-.03610	.29682	.06720	.00163	-.00007	.00034	-.00365	.26661	.14677	1.81648
10.330	19.984	-.03421	.41741	.06469	.00853	-.00009	.00020	-.00440	.37017	.20345	1.81948
10.330	24.276	-.03297	.58690	.06771	.00662	.00008	.00008	-.00569	.50716	.30302	1.67370
10.330	28.367	-.03030	.75620	.06927	.00203	.00006	.00029	-.00819	.63249	.42023	1.50510
10.330	32.337	-.03162	.93177	.06905	-.00497	-.00019	.00028	-.00981	.75033	.55674	1.34772
10.330	36.498	-.02762	1.13328	.06867	-.01822	-.00020	.00041	-.01233	.87017	.72927	1.19320

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LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH003)

PARAMETRIC DATA

BETA = .000 ELEVTR = .000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 35/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.985	-.03684	.18491	.06798	-.00997	-.00017	.00035	-.00288	.16676	.10469	1.59988
10.330	16.039	-.03686	.30610	.06927	-.00920	-.00007	.00037	-.00373	.27504	.15115	1.81973
10.330	20.097	-.03538	.44265	.06917	-.00958	-.00006	.00033	-.00486	.39193	.21705	1.80566
10.330	24.129	-.03364	.60682	.07308	-.01885	.00001	.00023	-.00619	.52392	.31476	1.66452
10.330	28.338	-.03314	.79066	.07537	-.03058	-.00012	.00042	-.00838	.66013	.44164	1.49470
10.330	32.363	-.03117	.97696	.07682	-.04555	-.00027	.00046	-.01058	.78409	.58783	1.33387
10.330	36.376	-.03035	1.17293	.07813	-.06420	-.00035	.00050	-.01262	.89803	.75855	1.18388

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH004)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 36/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.954	-.03480	.20154	.07129	-.02303	-.00016	.00036	-.00329	.16240	.11149	1.63611
10.330	16.026	-.03616	.33047	.07392	-.02794	-.00011	.00041	-.00420	.29722	.16228	1.83150
10.330	20.113	-.03331	.47338	.07391	-.03392	-.00016	.00033	-.00517	.41910	.23218	1.80503
10.330	24.160	-.03224	.64795	.08069	-.04958	-.00008	.00021	-.00641	.55817	.33882	1.64740
10.330	28.187	-.03242	.83191	.08628	-.06723	-.00039	.00046	-.00883	.69249	.46900	1.47653
10.330	32.251	-.03165	1.02703	.09100	-.08730	-.00066	.00050	-.01097	.82002	.62500	1.31202
10.330	36.304	-.03113	1.23119	.09535	-.11068	-.00090	.00069	-.01343	.93574	.80579	1.16126

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CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH005)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 37/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.932	-5.12650	.20751	.07339	-.02057	.00572	.00538	.03929	.18786	.11471	1.63767
10.330	15.981	-5.16952	.34410	.07659	-.02600	.00605	.00705	.03537	.30971	.16836	1.83956
10.330	20.044	-5.18617	.48986	.07976	-.03546	.00624	.00838	.03260	.43285	.24283	1.78254
10.330	24.184	-5.16921	.66689	.08545	-.04987	.00703	.00889	.03092	.57335	.35116	1.63276
10.330	28.232	-5.11855	.84795	.09026	-.06780	.00819	.00870	.03102	.70438	.48064	1.46549
10.330	32.329	-5.04412	1.04404	.09382	-.08852	.00905	.00892	.02762	.83204	.63760	1.30495
10.330	36.355	-4.94300	1.23715	.09835	-.11211	.00992	.00865	.02541	.93806	.81257	1.15443

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH006)

PARAMETRIC DATA

BETA = .000 ELEVTR = -20.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 40/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.048	-.01954	.16497	.06708	.00549	-.00037	.00031	-.00280	.14734	.10004	1.47277
10.330	16.064	-.01874	.27716	.06780	.01534	-.00038	.00039	-.00352	.24758	.14165	1.74538
10.330	20.184	-.01814	.39694	.06526	.02766	-.00043	.00022	-.00434	.35005	.19821	1.76606
10.330	24.213	-.01790	.54310	.06775	.03373	-.00049	.00016	-.00549	.46754	.28453	1.64320
10.330	28.281	-.01705	.70492	.06981	.03780	-.00075	.00034	-.00758	.58770	.39546	1.48610
10.330	32.428	-.01737	.87411	.06912	.04045	-.00103	.00035	-.00968	.70075	.52707	1.32951
10.330	36.507	-.01757	1.06435	.06780	.03847	-.00123	.00053	-.01168	.81517	.68771	1.18533

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH007)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 38/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.064	-.01857	.15447	.06951	.01100	-.00034	.00037	-.00302	.13653	.10026	1.36173
10.330	16.365	-.01762	.26891	.06901	.02036	-.00032	.00030	-.00354	.23852	.14207	1.67893
10.330	20.076	-.01532	.37866	.06628	.02997	-.00050	.00026	-.00423	.33291	.19223	1.73179
10.330	24.181	-.01327	.52664	.07011	.03689	-.00049	.00012	-.00553	.45171	.27968	1.61512
10.330	28.379	-.01477	.68082	.07184	.04255	-.00074	.00030	-.00779	.56486	.38680	1.46035
10.330	32.715	-.01639	.85920	.07241	.04754	-.00104	.00039	-.00979	.68377	.52529	1.30170
10.330	36.549	-.01528	1.01597	.07160	.04860	-.00122	.00050	-.01126	.77354	.66254	1.16754

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S0) (V8R5) (RHH008)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 39/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.039	-5.11062	.16189	.07186	.01334	.00371	.00469	.03958	.14333	.10405	1.37755
10.330	16.168	-5.15442	.27331	.07186	.02230	.00425	.00641	.03659	.24249	.14512	1.67100
10.330	20.123	-5.17209	.39684	.07304	.03115	.00436	.00798	.03367	.34748	.20511	1.69408
10.330	24.357	-5.15688	.54378	.07395	.03943	.00507	.00890	.03118	.46488	.29163	1.59410
10.330	28.482	-5.10956	.69215	.07420	.04536	.00607	.00902	.03016	.57299	.39529	1.44956
10.330	32.610	-5.03429	.85850	.07427	.04908	.00684	.00876	.02906	.68314	.52523	1.30066
10.330	36.647	-4.93269	1.02307	.07441	.04870	.00745	.00846	.02808	.77642	.67036	1.15821

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LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W16E26) (V8R5) (RHH009)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 81/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.895	-.04861	.18976	.08142	-.03119	.00013	.00034	-.00324	.16891	.11878	1.42201
10.330	16.104	-.04813	.31352	.08290	-.03990	.00042	.00030	-.00252	.27822	.16662	1.66984
10.330	19.998	-.04578	.44995	.08662	-.05274	.00069	.00024	-.00216	.39319	.23528	1.67120
10.330	24.016	-.04748	.61552	.09095	-.07355	.00078	.00024	-.00208	.52522	.33359	1.57442
10.330	28.281	-.04507	.80614	.09621	-.09945	.00087	.00039	-.00226	.66434	.46667	1.42358
10.330	32.047	-.04365	.98134	.09910	-.12535	.00073	.00038	-.00289	.77922	.60470	1.28860
10.330	36.083	-.04337	1.17676	.10198	-.15643	.00055	.00047	-.00369	.89096	.77547	1.14892

CFHT 104 (LA-47) (B26C9F10M7) (W16E26) (V8R5) (RHH010)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 82/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.846	-5.09661	.19145	.08354	-.02958	.00516	.00480	.04703	.17023	.12106	1.40610
10.330	15.903	-5.14007	.31963	.08747	-.03999	.00559	.00619	.04500	.28342	.17170	1.65066
10.330	19.972	-5.15488	.46325	.09182	-.05489	.00633	.00720	.04382	.40402	.24453	1.65225
10.330	23.995	-5.14120	.62651	.09508	-.07472	.00727	.00824	.04219	.53370	.34164	1.56218
10.330	27.979	-5.09632	.80617	.09877	-.09866	.00863	.00816	.04300	.66561	.46545	1.43004
10.330	32.089	-5.02770	.99205	.10023	-.12639	.00932	.00912	.04023	.78723	.61194	1.28646
10.330	36.116	-4.92804	1.19105	.10475	-.16005	.01033	.00892	.03969	.90042	.78666	1.14462

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LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W16E26S2) (V8R5) (RHH011)

PARAMETRIC DATA

BETA = .000 ELEVTR = .000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 76/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.011	-.00215	.19998	.07033	.00804	-.00054	.00056	-.00268	.16097	.11040	1.63913
10.330	16.187	-.00355	.32928	.07264	.02186	-.00049	.00061	-.00186	.29597	.16155	1.83205
10.330	20.251	-.00552	.47141	.07354	.03466	-.00039	.00042	-.00036	.41681	.23216	1.79536
10.330	24.369	-.00941	.63430	.07528	.04317	-.00066	.00090	-.00003	.54672	.33029	1.65529
10.330	28.473	-.00878	.82377	.07793	.04904	-.00052	.00102	.00029	.68698	.46123	1.48945
10.330	32.621	-.01166	1.01988	.07847	.05163	-.00058	.00123	.00008	.81669	.61589	1.32604
10.330	36.731	-.01283	1.23659	.07995	.04746	-.00060	.00134	.00014	.94327	.80362	1.17377

CFHT 104 (LA-47) (B26C9F10M7) (W16E26S2) (V8R5) (RHH012)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 41/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.974	-.02656	.21658	.07331	-.00997	-.00015	.00064	-.00339	.19665	.11665	1.68582
10.330	16.045	-.02669	.35051	.07740	-.00649	.00001	.00053	-.00377	.31547	.17127	1.84197
10.330	20.055	-.02395	.50567	.08074	-.00544	.00029	.00027	-.00446	.44731	.24925	1.79464
10.330	24.236	-.02453	.69207	.08659	-.00996	.00018	.00048	-.00607	.59552	.36305	1.64031
10.330	28.439	-.02225	.89054	.09309	-.01784	.00020	.00060	-.00790	.73874	.50595	1.46010
10.330	32.509	-.02031	1.10176	.09861	-.02746	.00018	.00071	-.00990	.87613	.67528	1.29744
10.330	36.466	-.02067	1.32042	.10500	-.04150	-.00002	.00078	-.01170	.99949	.86922	1.14986

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S2) (V8R5) (RHH013)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 42/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.055	-5.12879	.22687	.07586	-.00847	.00589	.00479	.03910	.20602	.12157	1.69463
10.330	15.952	-5.16825	.35995	.07974	-.00534	.00625	.00664	.03251	.32417	.17560	1.84609
10.330	20.171	-5.18070	.51788	.08412	-.00554	.00718	.00763	.02643	.45711	.25753	1.77496
10.330	24.288	-5.15942	.70924	.09006	-.01023	.00841	.00808	.02517	.60942	.37382	1.63026
10.330	28.472	-5.10614	.91229	.09654	-.01951	.00951	.00778	.02555	.75592	.51978	1.45431
10.330	32.561	-5.03174	1.10885	.10036	-.02981	.01001	.00852	.02179	.88055	.68136	1.29233
10.330	36.552	-4.92882	1.32943	.10759	-.04519	.01118	.00816	.02059	1.00387	.87817	1.14314

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S2) (V8R5) (RHH014)

PARAMETRIC DATA

BETA = .000 ELEVTR = -20.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 75/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.034	-.00303	.18799	.07013	.01805	-.00050	.00059	-.00291	.16923	.10778	1.57014
10.330	16.487	-.00469	.31901	.07271	.03697	-.00045	.00066	-.00159	.28526	.16026	1.77998
10.330	20.305	-.00629	.44610	.07364	.05477	-.00025	.00048	.00022	.39283	.22387	1.75474
10.330	24.464	-.00965	.60176	.07533	.07115	-.00050	.00099	.00067	.51654	.31777	1.62552
10.330	28.600	-.01198	.78044	.07820	.08515	-.00034	.00110	.00112	.64778	.44225	1.46473
10.330	32.674	-.01298	.96045	.07814	.09810	-.00037	.00121	.00115	.76628	.58428	1.31149
10.330	36.851	-.01217	1.16496	.07791	.10570	-.00037	.00152	.00140	.88547	.76101	1.16355

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CFHT 104 (LA-47) (B26C9F10M7) (W116E26S2) (V8R5) (RHH015)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPOBRK = 55.000

RUN NO. 43/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.096	-.02091	.17611	.07373	.02449	-.00057	.00048	-.00272	.15675	.10900	1.43812
10.330	16.184	-.02062	.29585	.07435	.04187	-.00051	.00058	-.00331	.26340	.15386	1.71194
10.330	20.321	-.01699	.43696	.07633	.06019	-.00035	.00034	-.00414	.38326	.22333	1.71612
10.330	24.474	-.02105	.59267	.07837	.07744	-.00065	.00062	-.00534	.50695	.31686	1.59992
10.330	28.651	-.02025	.76390	.08112	.09373	-.00065	.00064	-.00721	.63148	.43746	1.44352
10.330	32.798	-.01960	.94973	.08223	.10951	-.00068	.00070	-.00901	.75379	.58357	1.29170
10.330	36.826	-.01929	1.13645	.08293	.12021	-.00080	.00088	-.01089	.85998	.74756	1.15038

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S2) (V8R5) (RHH016)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPOBRK = 55.000

RUN NO. 44/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.127	-5.09133	.18609	.07605	.02790	.00360	.00478	.03945	.16596	.11345	1.46283
10.330	16.305	-5.13522	.30694	.07672	.04477	.00417	.00700	.03280	.27305	.15981	1.70864
10.330	20.385	-5.14628	.44353	.07885	.06171	.00501	.00777	.02975	.38829	.22840	1.70002
10.330	24.378	-5.12784	.60441	.08182	.07893	.00587	.00833	.02764	.51675	.32400	1.59491
10.330	28.646	-5.07776	.78421	.08429	.09514	.00696	.00816	.02749	.64782	.44992	1.43984
10.330	32.850	-5.00470	.96332	.08398	.10908	.00722	.00915	.02362	.76373	.59309	1.28771
10.330	36.879	-4.89961	1.14170	.08391	.11809	.00800	.00877	.02248	.86289	.75228	1.14703

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CFHT 104 (LA-47) (B26C9F10M7) (W16E26S1) (V6R5) (RHH017)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 79/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.952	-.06348	.21990	.06485	-.01460	.00012	.00026	-.00259	.20170	.10898	1.85073
10.330	16.072	-.06474	.35944	.06851	-.01583	.00036	.00033	-.00209	.32642	.16534	1.97421
10.330	20.314	-.06377	.51982	.07169	-.01843	.00050	.00018	-.00170	.46260	.24769	1.86763
10.330	24.129	-.06149	.69459	.08055	-.03016	.00069	.00009	-.00121	.60097	.35746	1.68121
10.330	28.228	-.06104	.88958	.08512	-.04278	.00069	.00005	-.00073	.74352	.49576	1.49977
10.330	32.315	-.05970	1.09946	.09049	-.05916	.00033	.00025	-.00117	.88080	.66422	1.32608
10.330	36.402	-.05903	1.30986	.09653	-.07947	.00020	.00038	-.00186	.99698	.85503	1.16601

CFHT 104 (LA-47) (B26C9F10M7) (W16E26S1) (V6R5) (RHH018)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 80/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.900	-5.12513	.22131	.06893	-.01285	.00643	.00614	.04015	.20234	.11309	1.78921
10.330	16.170	-5.16893	.36608	.07106	-.01372	.00771	.00792	.03623	.33181	.17020	1.94954
10.330	20.135	-5.18012	.52165	.07602	-.01963	.00784	.00867	.03564	.46360	.25095	1.84736
10.330	24.149	-5.16255	.70008	.08183	-.02927	.00877	.00907	.03521	.60533	.36109	1.67643
10.330	28.330	-5.10918	.90554	.08815	-.04385	.01014	.00867	.03614	.75524	.50732	1.48868
10.330	32.339	-5.03255	1.10007	.09230	-.06026	.01113	.00873	.03469	.88008	.66643	1.32058
10.330	36.464	-4.92106	1.31581	.09948	-.08173	.01255	.00740	.03666	.99909	.86201	1.15902

APPENDIX

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S1) (V6R5) (RHH019)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPOBRK = 55.000

RUN NO. 77/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.025	-.00276	.17601	.06378	.01778	-.00031	.00034	-.00332	.16082	.09947	1.61673
10.330	16.138	-.00262	.30243	.06513	.03165	-.00025	.00040	-.00263	.27242	.14662	1.85794
10.330	20.155	-.00235	.43446	.06675	.04618	-.00024	.00038	-.00205	.38486	.21236	1.81225
10.330	24.452	-.00338	.59215	.06985	.05880	-.00023	.00028	-.00171	.51013	.30869	1.65258
10.330	28.549	-.00417	.76524	.07326	.06917	-.00036	.00034	-.00167	.63718	.43007	1.48159
10.330	32.651	-.00697	.94154	.07336	.07862	-.00087	.00052	-.00163	.75316	.56975	1.32191
10.330	36.763	-.00891	1.13425	.07417	.08310	-.00105	.00081	-.00239	.86428	.73828	1.17067

CFHT 104 (LA-47) (B26C9F10M7) (W116E26S1) (V6R5) (RHH020)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPOBRK = 55.000

RUN NO. 78/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.995	-5.09687	.18062	.06827	.01989	.00483	.00634	.04005	.16248	.10432	1.55760
10.330	16.121	-5.14042	.30955	.06817	.03447	.00523	.00811	.03662	.27845	.15144	1.83861
10.330	20.330	-5.15351	.44591	.07036	.04753	.00566	.00897	.03662	.39369	.22090	1.78216
10.330	24.415	-5.13454	.60098	.07270	.06052	.00652	.00965	.03567	.51719	.31460	1.64395
10.330	28.552	-5.08469	.77055	.07431	.07121	.00762	.00957	.03568	.64132	.43357	1.47917
10.330	32.715	-5.00842	.95236	.07538	.07789	.00830	.00927	.03664	.76055	.57814	1.31551
10.330	36.828	-4.89782	1.13930	.07632	.08133	.00957	.00826	.03706	.86620	.74400	1.16424

APPENDIX

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7C3) (W116E26S0) (V8R5) (RHH021)

PARAMETRIC DATA

BETA = .000 ELEVTR = .000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 73/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.985	-.03455	.19998	.07205	.00832	-.00038	.00021	-.00242	.18066	.11200	1.61302
10.330	16.469	-.03661	.33869	.07511	.02191	-.00037	.00028	-.00171	.30350	.16804	1.80612
10.330	20.370	-.03645	.48038	.07845	.03355	-.00046	.00018	-.00058	.42303	.24076	1.75708
10.330	24.398	-.03635	.64436	.08034	.04159	-.00057	.00005	-.00010	.55363	.33933	1.63153
10.330	28.523	-.03914	.82641	.08224	.04503	-.00058	.00041	-.00053	.68859	.46784	1.47184
10.330	32.592	-.03932	1.02488	.08260	.04506	-.00066	.00042	-.00065	.81899	.62165	1.31745
10.330	36.679	-.04255	1.23506	.08305	.03950	-.00108	.00077	-.00119	.94090	.80435	1.16977

CFHT 104 (LA-47) (B26C9F10M7C3) (W116E26S0) (V8R5) (RHH022)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 87/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.694	-.00892	.21510	.07453	-.01004	-.00011	.00036	-.00312	.19512	.11726	1.66398
10.330	16.312	-.00946	.35698	.07940	-.00754	-.00001	.00029	-.00397	.32031	.17647	1.81512
10.330	20.011	-.00782	.50007	.08469	-.00748	-.00001	.00025	-.00508	.44090	.25070	1.75868
10.330	24.077	-.00581	.67730	.09075	-.01248	-.00004	.00000	-.00657	.58135	.35917	1.61859
10.330	28.413	-.00452	.87666	.09700	-.02252	-.00019	.00013	-.00893	.72508	.50254	1.44282
10.330	32.457	-.00357	1.08590	.10104	-.03315	-.00044	.00010	-.01094	.86205	.66802	1.29045
10.330	36.474	-.00515	1.29840	.10500	-.04796	-.00090	.00021	-.01298	.98166	.85628	1.14643

APPENDIX

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7C3) (W116E26S0) (V8R5) (RHH023)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 46/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.053	-5.10074	.22764	.07748	-.00741	.00519	.00538	.03803	.20644	.12331	1.67414
10.330	16.022	-5.14472	.35875	.08073	-.00507	.00569	.00763	.03168	.32253	.17661	1.82624
10.330	20.241	-5.15746	.51303	.08697	-.00750	.00602	.00821	.02973	.45126	.25909	1.74170
10.330	24.248	-5.13314	.69346	.09260	-.01286	.00705	.00843	.02755	.59426	.36922	1.60948
10.330	28.422	-5.08434	.88747	.09823	-.02243	.00821	.00815	.02690	.73375	.50878	1.44216
10.330	32.435	-5.00318	1.08883	.10337	-.03533	.00933	.00761	.02523	.86353	.67122	1.28651
10.330	36.552	-4.89806	1.30614	.10876	-.05273	.01040	.00696	.02384	.98447	.86525	1.13779

CFHT 104 (LA-47) (B26C9F10M7C3) (W116E26S0) (V8R5) (RHH024)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 45/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.101	-.00575	.17283	.07365	.02309	-.00032	.00039	-.00299	.15355	.10825	1.41848
10.330	16.446	-.00401	.29242	.07454	.03942	-.00030	.00024	-.00383	.25936	.15428	1.68110
10.330	20.282	-.00224	.41624	.07684	.05477	-.00034	.00013	-.00479	.36380	.21636	1.68145
10.330	24.676	-.00161	.57198	.07955	.07202	-.00051	-.00002	-.00596	.48654	.31108	1.56400
10.330	28.609	-.00157	.72894	.08231	.08569	-.00072	.00011	-.00820	.60053	.42130	1.42542
10.330	32.700	-.00085	.89884	.08283	.09902	-.00102	.00004	-.00965	.71164	.55530	1.28154
10.330	36.790	-.00230	1.07974	.08208	.10892	-.00129	.00016	-.01186	.81553	.71238	1.14480

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7C3) (W116E26S0) (V8R5) (RHH025)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 46/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.022	-5.11518	.17639	.07504	.02558	.00292	.00490	.03816	.15689	.11013	1.42454
10.330	16.201	-5.16492	.28940	.07620	.04157	.00334	.00712	.03288	.25665	.15392	1.66738
10.330	20.364	-5.17651	.42230	.07998	.05702	.00356	.00800	.03030	.36808	.22193	1.65852
10.330	24.293	-5.16111	.57104	.08229	.07295	.00446	.00851	.02815	.48662	.30993	1.57009
10.330	28.663	-5.11126	.73877	.08435	.08783	.00554	.00831	.02776	.60778	.42837	1.41882
10.330	32.784	-5.02850	.91319	.08512	.09933	.00647	.00776	.02699	.72164	.56603	1.27492
10.330	36.858	-4.92479	1.08534	.08528	.10699	.00709	.00726	.02507	.81726	.71925	1.13626

CFHT 104 (LA-47) (B26C9F10M7C4) (W116E26S0) (V8R5) (RHH026)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 67/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.228	-.07611	.23124	.07588	-.00486	.00000	.00025	-.00177	.20992	.12314	1.70480
10.330	16.054	-.07955	.36296	.08212	-.00138	.00019	.00026	-.00131	.32609	.17930	1.81874
10.330	20.477	-.07758	.52909	.08854	.00149	.00040	.00027	-.00053	.46469	.26804	1.73368
10.330	24.201	-.07575	.70032	.09531	-.00095	.00053	.00004	-.00011	.59970	.37402	1.60340
10.330	28.394	-.07473	.89736	.10155	-.00670	.00052	.00005	-.00008	.74111	.51606	1.43610
10.330	32.375	-.07409	1.10017	.10549	-.01332	.00014	.00010	-.00003	.87268	.67819	1.28677
10.330	36.677	-.07562	1.33648	.11196	-.02599	-.00001	.00017	-.00038	1.00501	.88807	1.13167

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7C4) (W16E26S0) (V8R5) (RHH027)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 68/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.993	-5.10047	.22780	.07877	-.00280	.00514	.00524	.03900	.20646	.12438	1.65985
10.330	16.085	-5.14338	.36697	.08422	.00034	.00567	.00686	.03613	.32927	.18260	1.80328
10.330	20.160	-5.15845	.52419	.09008	.00204	.00587	.00797	.03424	.46103	.26522	1.73831
10.330	24.299	-5.14439	.71504	.09692	-.00067	.00670	.00887	.03334	.61181	.38257	1.59920
10.330	28.425	-5.09602	.90906	.10184	-.00663	.00800	.00867	.03419	.75099	.52229	1.43789
10.330	32.528	-5.01295	1.11444	.10769	-.01607	.00935	.00818	.03403	.88171	.69005	1.27775
10.330	36.767	-4.89821	1.34486	.11479	-.03091	.01110	.00694	.03534	1.00863	.89693	1.12453

CFHT 104 (LA-47) (B26C9F10M7C4) (W16E26S0) (V8R5) (RHH028)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 69/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.041	-.04324	.18566	.07676	.02902	-.00041	.00042	-.00246	.16556	.11381	1.45477
10.330	16.219	-.04286	.31707	.08097	.04793	-.00028	.00049	-.00189	.28184	.16631	1.69472
10.330	20.670	-.04456	.46741	.08355	.07020	-.00032	.00055	-.00129	.40783	.24316	1.67721
10.330	24.500	-.04345	.62284	.08775	.08877	-.00045	.00046	-.00067	.53037	.33814	1.56849
10.330	28.611	-.04337	.79541	.09033	.10659	-.00060	.00058	-.00050	.65504	.46019	1.42341
10.330	32.811	-.04475	.97955	.09113	.12343	-.00092	.00080	-.00084	.77389	.60738	1.27415
10.330	36.955	-.04730	1.17859	.09114	.13723	-.00101	.00093	-.00057	.88702	.78139	1.13519

LA47 TABULATED DATA

CFHT 104 (LA-47) (B26C9F10M7C4) (W116E26S0) (V8R5) (RHH029)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 70/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.053	-5.13979	.18857	.07815	.03045	.00244	.00686	.03743	.16609	.11580	1.45157
10.330	16.170	-5.18181	.31725	.08235	.04978	.00352	.00744	.03742	.28177	.16745	1.68271
10.330	20.397	-5.19621	.46474	.08597	.07112	.00379	.00897	.03505	.40564	.24255	1.67236
10.330	24.467	-5.18451	.62585	.08908	.09083	.00448	.00997	.03386	.53276	.34029	1.56560
10.330	28.747	-5.13375	.80393	.09076	.10819	.00539	.00961	.03550	.66119	.46622	1.41821
10.330	32.860	-5.05365	.98898	.09217	.12315	.00655	.00917	.03575	.78073	.61403	1.27146
10.330	37.021	-4.94475	1.18394	.09314	.13323	.00771	.00809	.03729	.88920	.78722	1.12955

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S0) (V8R5) (RHH030)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 49/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.978	-.02887	.20596	.07393	-.00924	-.00006	-.00054	-.00423	.18614	.11505	1.61784
10.330	16.005	-.02860	.33017	.07831	-.01725	.00005	-.00063	-.00527	.29578	.16631	1.77847
10.330	20.029	-.02713	.47380	.08109	-.02609	.00007	-.00078	-.00693	.41737	.23845	1.75033
10.330	24.146	-.02260	.64540	.08587	-.03960	.00004	-.00089	-.00861	.55381	.34236	1.61761
10.330	28.264	-.02264	.83336	.09225	-.05752	-.00008	-.00091	-.01078	.69031	.47588	1.45061
10.330	32.286	-.01994	1.02468	.09707	-.07797	-.00018	-.00097	-.01303	.81441	.62939	1.29396
10.330	36.400	-.01959	1.23359	.10228	-.10273	-.00048	-.00092	-.01475	.93221	.81436	1.14471

APPENDIX

LA47 TABULATED DATA

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S0) (V8R5) (RHH031)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 50/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.992	-5.11470	.21539	.07625	-.00722	.00575	.00413	.03903	.19485	.11934	1.63281
10.330	16.114	-5.15404	.34188	.07961	-.01441	.00653	.00552	.03542	.30635	.17136	1.78772
10.330	20.197	-5.17182	.48922	.08404	-.02577	.00635	.00760	.03105	.43013	.24778	1.73592
10.330	24.086	-5.15312	.65941	.08904	-.03956	.00742	.00796	.02854	.56566	.35039	1.61435
10.330	28.284	-5.10366	.84593	.09486	-.05841	.00847	.00770	.02787	.69999	.48437	1.44516
10.330	32.409	-5.02624	1.04591	.09957	-.08092	.00922	.00762	.02532	.82964	.64462	1.28702
10.330	36.421	-4.92188	1.24456	.10516	-.10544	.01024	.00711	.02305	.93904	.82353	1.14026

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S0) (V8R5) (RHH032)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 55/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.282	-.00260	.16878	.07403	.02541	-.00028	-.00049	-.00461	.14917	.10824	1.37814
10.330	16.146	.00007	.27576	.07559	.03093	-.00031	-.00066	-.00535	.24386	.14929	1.63347
10.330	20.209	.00146	.40213	.07577	.03635	-.00035	-.00087	-.00676	.35120	.21002	1.67223
10.330	24.322	.00319	.54686	.07728	.04532	-.00050	-.00095	-.00817	.46649	.29565	1.57788
10.330	28.511	.00433	.71174	.07938	.05129	-.00072	-.00102	-.01022	.58754	.40949	1.43481
10.330	32.588	.00531	.87949	.08065	.05518	-.00093	-.00104	-.01217	.69759	.54164	1.28793
10.330	36.463	.00469	1.05159	.08028	.05581	-.00114	-.00104	-.01333	.79802	.68953	1.15733

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S0) (V8R5) (RHH033)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPOBRK = 55.000

RUN NO. 56/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.120	-5.10791	.17344	.07616	.02768	.00384	.00401	.03998	.15358	.11068	1.38518
10.330	16.214	-5.15127	.28974	.07770	.03441	.00462	.00556	.03699	.25652	.15551	1.64950
10.330	20.296	-5.16987	.41401	.07850	.04030	.00449	.00779	.03267	.36108	.21724	1.66211
10.330	24.355	-5.15253	.55601	.07996	.04707	.00545	.00829	.03021	.47356	.30214	1.56736
10.330	28.549	-5.10327	.71988	.08164	.05311	.00636	.00829	.02917	.59334	.41575	1.42715
10.330	32.500	-5.03010	.87853	.08149	.05570	.00699	.00809	.02736	.69716	.54076	1.28922
10.330	36.539	-4.92498	1.05749	.08235	.05469	.00782	.00734	.02635	.80061	.69576	1.15070

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S2) (V8R5) (RHH034)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPOBRK = 55.000

RUN NO. 59/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.867	-.01726	.22090	.07456	.00374	-.00020	.00003	-.00434	.20085	.11839	1.69651
10.330	16.139	-.01583	.35536	.08086	.00390	-.00004	-.00009	-.00498	.31887	.17645	1.80711
10.330	20.189	-.01239	.50903	.08538	.00149	.00006	-.00050	-.00527	.44629	.25580	1.75249
10.330	24.222	-.01205	.68646	.09160	-.00315	.00004	-.00016	-.00778	.58845	.36517	1.61144
10.330	28.356	-.01004	.88624	.09951	-.01170	.00011	-.00020	-.00975	.73264	.50849	1.44083
10.330	32.481	-.00748	1.09147	.10547	-.02138	.00004	-.00008	-.01230	.86409	.67511	1.27992
10.330	36.490	-.00647	1.30403	.11134	-.03523	-.00005	-.00026	-.01288	.98217	.86500	1.13546

LA47 TABULATED DATA

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S2) (V8R5) (RHH035)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 60/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.034	-5.08625	.23709	.07862	.00804	.00595	.00366	.03756	.21548	.12633	1.70577
10.330	16.101	-5.12277	.36891	.08395	.00669	.00667	.00483	.03318	.33116	.18296	1.81000
10.330	20.209	-5.13981	.52337	.08885	.00264	.00683	.00693	.02722	.46046	.26418	1.74295
10.330	24.307	-5.12157	.70444	.09556	-.00262	.00798	.00735	.02464	.60265	.37706	1.59831
10.330	28.380	-5.07085	.89747	.10128	-.01142	.00905	.00736	.02292	.74146	.51569	1.43781
10.330	32.491	-4.99662	1.10088	.10665	-.02297	.00969	.00775	.01951	.87127	.68132	1.27880
10.330	36.561	-4.88871	1.31162	.11279	-.03851	.01059	.00744	.01781	.98634	.87190	1.13125

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S2) (V8R5) (RHH036)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 57/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.128	-.02009	.18036	.07449	.03817	-.00062	-.00015	-.00373	.16069	.11073	1.45123
10.330	16.225	-.02039	.29961	.07784	.05183	-.00054	-.00011	-.00475	.26593	.15845	1.67830
10.330	20.293	-.01725	.43370	.08082	.06623	-.00028	-.00037	-.00578	.37875	.22623	1.67420
10.330	24.463	-.01799	.59391	.08429	.08235	-.00040	-.00019	-.00764	.50569	.32267	1.56721
10.330	28.765	-.01698	.77741	.08826	.09920	-.00044	-.00024	-.00980	.63901	.45147	1.41539
10.330	32.590	-.01574	.93370	.08906	.11268	-.00054	-.00013	-.01203	.73872	.57796	1.27816
10.330	36.888	-.01492	1.13659	.08995	.12495	-.00056	-.00014	-.01300	.85506	.75418	1.13376

LA47 TABULATED DATA

CFHT 104 (LA-47) (B2 C9F10M7) (W116E26S2) (V8R5) (RHH037)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 58/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.139	-5.06583	.19068	.07694	.04120	.00400	.00386	.03731	.17024	.11531	1.47634
10.330	16.212	-5.10702	.30689	.08036	.05520	.00474	.00483	.03442	.27225	.16285	1.67181
10.330	20.336	-5.12365	.44592	.08358	.06859	.00479	.00692	.02883	.38908	.23335	1.66734
10.330	24.504	-5.10522	.60557	.08645	.08493	.00578	.00770	.02561	.51516	.32983	1.56190
10.330	28.636	-5.05773	.77336	.08893	.09946	.00677	.00769	.02450	.63615	.44868	1.41783
10.330	32.853	-4.97993	.95282	.08982	.11262	.00720	.00797	.02143	.75170	.59235	1.26901
10.330	36.955	-4.87348	1.14251	.09029	.12282	.00814	.00754	.02057	.85872	.75901	1.13136

CFHT 104 (LA-47) (B2 C9F10M7C3) (W116E26S0) (V8R5) (RHH038)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 61/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.046	-.02623	.22503	.07568	.00338	-.00002	-.00045	-.00452	.20427	.12098	1.68849
10.330	16.117	-.02419	.35660	.08374	.00187	.00006	-.00069	-.00568	.31934	.17944	1.77964
10.330	20.141	-.02029	.50925	.08940	.00028	.00020	-.00096	-.00697	.44732	.25928	1.72524
10.330	24.288	-.01752	.69264	.09689	-.00501	.00011	-.00125	-.00887	.59148	.37322	1.58481
10.330	28.368	-.01876	.89289	.10542	-.01572	-.00004	-.00100	-.01189	.73558	.51700	1.42279
10.330	32.443	-.01401	1.10222	.10999	-.02799	-.00016	-.00128	-.01340	.87119	.68411	1.27346
10.330	36.464	-.01302	1.31186	.11479	-.04341	-.00042	-.00130	-.01532	.98682	.87197	1.13171

APPENDIX

LA47 TABULATED DATA

CFHT 104 (LA-47) (B2 C9F10M7C3) (W16E26S0) (V8R5) (RHH039)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 62/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.068	-5.08077	.23171	.07959	.00563	.00542	.00412	.03742	.20995	.12627	1.66268
10.330	16.117	-5.12203	.37227	.08657	.00356	.00585	.00565	.03523	.33360	.18650	1.78873
10.330	20.209	-5.13425	.52366	.09322	-.00049	.00632	.00686	.02954	.45922	.26836	1.71111
10.330	24.266	-5.11389	.70067	.09899	-.00681	.00764	.00731	.02608	.59808	.37820	1.58139
10.330	28.429	-5.06180	.89884	.10561	-.01842	.00908	.00689	.02371	.74017	.52078	1.42127
10.330	32.506	-4.97791	1.10720	.11284	-.03365	.01008	.00603	.02298	.87310	.69017	1.26505
10.330	36.515	-4.87114	1.31902	.11838	-.05080	.01125	.00509	.02188	.98966	.87999	1.12462

CFHT 104 (LA-47) (B2 C9F10M7C3) (W16E26S0) (V8R5) (RHH040)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 71/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.988	-.04228	.18635	.07862	.03742	-.00027	-.00040	-.00428	.16596	.11561	1.43544
10.330	16.160	-.04235	.30646	.08289	.05008	-.00022	-.00061	-.00386	.27122	.16500	1.64375
10.330	20.307	-.04156	.44388	.08580	.06540	-.00015	-.00094	-.00310	.38651	.23451	1.64813
10.330	24.417	-.04153	.59831	.08989	.08152	-.00038	-.00097	-.00309	.50764	.32918	1.54213
10.330	28.572	-.04359	.77123	.09323	.09539	-.00075	-.00050	-.00440	.63272	.45073	1.40377
10.330	32.724	-.04337	.95347	.09428	.10852	-.00093	-.00069	-.00377	.75117	.59476	1.26299
10.330	36.880	-.04287	1.14734	.09419	.11788	-.00090	-.00052	-.00408	.86123	.76390	1.12741

LA47 TABULATED DATA

CFHT 104 (LA-47) (B2 C9F10M7C3) (W116E26SD) (V8R5) (RHH041)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 72/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.123	-5.12757	.18959	.08129	.03957	.00327	.00419	.04065	.16629	.11929	1.41079
10.330	16.221	-5.17145	.30931	.08453	.05270	.00389	.00582	.03777	.27339	.16757	1.63152
10.330	20.396	-5.19164	.45024	.08829	.06713	.00432	.00759	.03448	.39124	.23966	1.63246
10.330	24.538	-5.17390	.61233	.09089	.08313	.00538	.00837	.03237	.51929	.33697	1.54104
10.330	28.710	-5.12247	.78390	.09309	.09819	.00662	.00793	.03332	.64281	.45821	1.40289
10.330	32.762	-5.04367	.96242	.09537	.10637	.00727	.00734	.03431	.75772	.60101	1.26075
10.330	36.948	-4.93143	1.15170	.09623	.11299	.00843	.00655	.03366	.86258	.76918	1.12143

CFHT 104 (LA-47) (B4 C9F10M7) (W116E26SD) (V8R5) (RHH042)

PARAMETRIC DATA

BETA = .000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 51/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	11.962	-.02542	.20050	.07148	-.00921	-.00009	-.00014	-.00364	.18133	.11149	1.62647
10.330	15.957	-.02612	.32804	.07613	-.01613	-.00002	-.00007	-.00466	.29446	.16338	1.80230
10.330	20.039	-.02433	.47709	.07982	-.02230	-.00007	-.00004	-.00576	.42086	.23847	1.76485
10.330	24.254	-.02315	.65672	.08472	-.03187	.00001	-.00014	-.00725	.56395	.34700	1.62522
10.330	28.260	-.02251	.84520	.09123	-.04523	-.00013	-.00004	-.00905	.70127	.48053	1.45937
10.330	32.338	-.02049	1.04172	.09621	-.06119	-.00029	.00005	-.01108	.82869	.63852	1.29783
10.330	36.378	-.02039	1.25394	.10220	-.08157	-.00057	.00014	-.01288	.94896	.82600	1.14887

LA47 TABULATED DATA

CFHT 104 (LA-47) (B4 C9F10M7) (W16E26S0) (V8R5) (RHH043)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = 10.000
AILRON = .000 BDFLAP = 16.300
SPDBRK = 55.000

RUN NO. 52/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.004	-5.10116	.21112	.07397	-.00596	.00606	.00365	.03675	.19112	.11626	1.64391
10.330	16.126	-5.14313	.34419	.07814	-.01354	.00604	.00532	.03236	.30895	.17067	1.81024
10.330	20.152	-5.15532	.49250	.08332	-.02138	.00637	.00646	.02959	.43365	.24789	1.74934
10.330	24.136	-5.13924	.66699	.08824	-.03088	.00742	.00726	.02608	.57260	.35326	1.62090
10.330	28.321	-5.08789	.85883	.09435	-.04549	.00853	.00688	.02687	.71127	.49050	1.45010
10.330	32.425	-5.01236	1.06177	.09888	-.06365	.00927	.00697	.02500	.84322	.65278	1.29172
10.330	36.449	-4.90864	1.26166	.10414	-.08372	.01027	.00662	.02299	.95299	.83333	1.14360

CFHT 104 (LA-47) (B4 C9F10M7) (W16E26S0) (V8R5) (RHH044)

PARAMETRIC DATA

BETA = .000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 53/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.362	-.00153	.16612	.07195	.02493	-.00031	-.00004	-.00361	.14687	.10584	1.38759
10.330	15.968	-.00021	.26904	.07359	.03145	-.00037	-.00008	-.00463	.23842	.14477	1.64691
10.330	20.463	.00067	.40689	.07188	.04403	-.00051	-.00015	-.00571	.35608	.20959	1.69895
10.330	24.347	.00127	.55600	.07630	.05435	-.00062	-.00021	-.00676	.47510	.29873	1.59041
10.330	28.500	.00121	.71517	.07830	.06498	-.00082	-.00013	-.00862	.59114	.41006	1.44159
10.330	32.610	-.00062	.88860	.07911	.07383	-.00116	.00007	-.01082	.70588	.54552	1.29397
10.330	36.723	-.00121	1.07377	.07908	.07960	-.00142	.00016	-.01241	.81338	.70545	1.15299

LA47 TABULATED DATA

CFHT 104 (LA-47) (B4 C9F10M7) (W16E26S0) (V8R5) (RHH045)

PARAMETRIC DATA

BETA = -5.000 ELEVTR = -40.000
AILRON = .000 BDFLAP = -11.700
SPDBRK = 55.000

RUN NO. 54/ 0

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D
10.330	12.118	-5.06244	.17019	.07324	.02834	.00380	.00393	.03619	.15103	.10734	1.40700
10.330	16.200	-5.10459	.28622	.07545	.03569	.00415	.00529	.03346	.25381	.15231	1.66642
10.330	20.255	-5.11859	.41828	.07743	.04530	.00445	.00671	.02993	.36561	.21745	1.68135
10.330	24.198	-5.10628	.56269	.07921	.05692	.00518	.00751	.02768	.48078	.30289	1.58731
10.330	28.485	-5.05552	.72564	.08053	.06775	.00626	.00750	.02683	.59939	.41687	1.43783
10.330	32.655	-4.98017	.90178	.08068	.07496	.00681	.00739	.02581	.71570	.55452	1.29067
10.330	36.766	-4.87488	1.08237	.08156	.07907	.00766	.00684	.02529	.81825	.71319	1.14730